Coincidence or Contact: A Study of Sound Changes in Eastern Old Japanese Dialects and Ryukyuan Languages

by

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ABSTRACT

This thesis investigates similarities in the diachronic sound changes found in Eastern Old Japanese dialects and in Ryukyuan languages and tests a hypothesis of language contact. I examine three sound changes attested in the Eastern Old Japanese corpus of Kupchik (2011). These three are denasalization of prenasalized obstruents, the fortition of the labial glide [w] and prenasalized / simple voiced fricative [$^{(n)}$z], and the irregular raising of Eastern Old Japanese mid vowels. Extralinguistic and linguistic evidence is presented in support of a hypothesis for language contact between 8th century Ryukyuan speakers and Eastern Old Japanese speakers. At present, many assumptions bog down any potential evidence of contact. However, cases where reconstructed Ryukyuan could have donated a form into EOJ do exist. With future research into early Ryukyuan development and the lexicons, phonologies, and syntactic patterns of Ryukyuan languages, more can be said about this hypothesis. Alongside testing a hypothesis of language contact, this thesis can also be viewed as an analysis of Eastern Old Japanese spelling variation of the three changes mentioned above.

DEDICATION

To my parents, my brother, and everyone else who has shown me love and supported me.

ACKNOWLEDGMENTS

This thesis would not have been possible without the patience, advice, and support of my chair Dr. Pruitt and my committee members, Dr. van Gelderen and Dr. Adams. Additionally, I would like to thank Dr. Alexander Vovin for his many years of work on Japonic, and Dr. John Kupchik for his phenomenal dissertation on the dialects of 8th century eastern Japan, without which this thesis would not have been possible. Finally, I would like to express my profound appreciation also to the memory of all the scribes who copied and preserved the Man'yōshū in its various volumes from its initial compilation in the 8th century onward, and all those who contributed to the preservation of these documents since then into the present, for without these people, a most precious link to the past would have been lost forever.

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LIST OF ABBREVIATIONS

Grammatical terms

ALL	Allative Case
ATTR	Attributive
AVATTR	Adjectival Verb Attributive
CONC	Concessive
CONJ	Conjunction
DES	Desiderative Mood
EPT	Emphatic Particle
EV	Evidential
FIN	Final
GEN	Genitive Case
HON	Honorific
IMP	Imperative Mood
INF	Infinitive
ITER	Iterative
NEG	Negative
NML	Nominalizer
PERF	Perfective Aspect
POSS	Possessive Case
POT	Potential
PROG	Progressive Aspect
PST	Past Tense
REDUP	Reduplication
RETR	Retrospective
TENT	Tentative Mood

Phonological terms

V_1	The First Vowel In A Sequence Of Two Vowels From Proto-Japanese
V_2	The First Vowel In A Sequence Of Two Vowels From Proto-Japanese

Eastern Old Japanese provinces and dialects

KAK	Kamitukeno Province/Dialect
KAP	Kamitupusa Province/Dialect
MI	Mitinöku Province/Dialect
MU	Muzasi Province/Dialect
PI	Pitati Province/Dialect
SA	Sagamu Province/Dialect
SIK	Simotukeno Province/Dialect
SIN	Sinano Province/Dialect
SIP	Simotupusa Province/Dialect
SU	Suruga Province/Dialect
TO	Töpotuapumi Province/Dialect
UD	Unknown Dialect That Attests Eastern Old Japanese Features

Ryukyuan dialects

IS	Ishigaki Dialect
HA	Hateruma Dialect
YO	Yonaguni Dialect/Language
WA	Wadomari Dialect
CH	China Dialect
TOK	Tokunoshima Dialect

Other languages/dialects/classifications

COJ	Central Old Japanese
EOJ	Eastern Old Japanese
OJ	Old Japanese
PJ	Proto-Japonic
PJn	Proto-Japanese
PR	Proto-Ryukyuan
Pre-RY	Pre-Ryukyuan (after Proto-Ryukyuan but before Modern Ryukyuan)
Proto-V_1-EOJ	Proto-V_1 contracting Eastern Old Japanese (a Proto-Japanese daughter dialect)
Proto-V_2-EOJ	Proto-V_2 contracting Eastern Old Japanese (a Proto-Japanese daughter dialect)
WOJ	Western Old Japanese

CHAPTER 1

INTRODUCTION

1.0 A contact hypothesis

The idea for a contact hypothesis between Pre-Ryukyuan (Ryukyuan before it was spoken in the Ryukyuan islands, Pre-RY) speakers and Eastern Old Japanese (EOJ) speakers of the 8th century, occurred to me when I was reading through Kupchik (2011)'s proposed sporadic changes in EOJ, while considering a possible relationship between EOJ dialects and Ryukyuan, as viewed by Thorpe (1983). It seemed strange that vowel raising and fortition only occurred in a few cases in EOJ dialects. Additionally, denasalization of prenasalized obstruents is attested in many EOJ dialects but is only somewhat regular in a few. However, denasalization and vowel raising are quite regular in Ryukyuan languages, and are both attested historically as well although less regularly, i.e. in Old Okinawan. Furthermore, the correspondence of Ryukyuan [b] to EOJ and Western Old Japanese (WOJ) [w] is also attested in Modern Ryukyuan varieties. Considering this, it occurred to me if these properties of Ryukyuan languages reflected older changes, and Ryukyuan speakers were in contact with EOJ speakers, perhaps these three sporadic changes in EOJ dialects could be explained by language contact between EOJ speakers and Pre-RY speakers. As it turns out, EOJ border guards were often sent to Kyushu, where Pre-RY speakers most likely resided. Thus, there is reason to believe that EOJ border guards came in contact with Pre-RY speakers in Kyushu.

Regarding linguistic evidence in support of a contact hypothesis, there are two functional morphemes (the possessive case marker and a conditional suffix), and five lexical items (verbs and nouns) that may have been borrowed from Pre-RY speakers based on what those forms may have been in the past, based on reconstructions. Due to the lack of confirmed contact between Ryukyuan speakers and EOJ speakers however, what appears to have potentially been language contact may have just been coincidental similarity as a result of independent innovation. At present, supporting evidence of language contact is lacking, but there do exist cases which could have been borrowing from Pre-RY into EOJ. In my conclusion, I conclude that further research is required to ascertain whether or not contact between Pre-RY speakers and EOJ speakers in the 8th century happened.

As for the organization of this thesis, first I begin with an introduction to the Japonic language family. Following that, I discuss the geography of 8th century Japan and its dialect areas. After that, I briefly discuss the Man'yōshū, the source of all EOJ data analyzed by Kupchik (2011). Followed this, I analyze all cases in the EOJ data from Kupchik (2011)[1]'s corpus that attest denasalization, fortition, and vowel raising, and compare these forms to their reflexes in Proto-Ryukyuan (PR), drawing from Thorpe (1983)'s PR reconstructions when available, and when they are not, I reconstruct my own. In my conclusion, I review the results of my analysis and conclude what can be said for the Ryukyuan-Eastern Old Japanese contact hypothesis and what future research can do to resolve existing problems in the EOJ and Ryukyuan data.

[1] All WOJ and EOJ data, as well as Proto-Japanese reconstructions are from Kupchik (2011) unless otherwise stated. I use bold font for reconstructions that I propose which are not found in Kupchik (2011).

CHAPTER 2

JAPONIC LANGUAGE FAMILY THEORIES

2.1 EOJ dialects and Ryukyuan

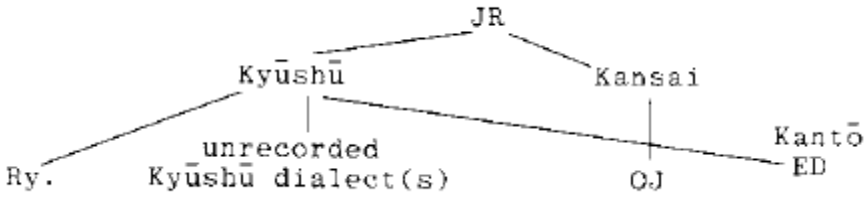

Figure 1: Thorpe (1983: 236)'s tree of the Japonic language family

In Figure 1, JR stands for Japanese-Ryukyuan (what will be re-analyzed as Proto-Japonic in the following section). The most salient feature of this tree, is the relationship between EOJ dialects (his 'ED'), and Ryukyuan (his 'Ry.'). Thorpe (1983: 236) proposes a close relationship between EOJ dialects and Ryukyuan via a proto-language 'Kyushu'. He claims that the vowel systems between EOJ and PR are quite similar. Although similarities can be seen in the raising of mid vowels [e, o] to [i, u], and Central Old Japanese (COJ) and WOJ [ɨ] which corresponds to Modern Ryukyuan and EOJ dialects' [i], I am confident that EOJ dialects are not related to PR by means of a Proto-Kyushu proto-language. As will be seen below, EOJ has a large amount of functional morphology not attested anywhere in Ryukyuan languages and their dialects. These functional morphemes cannot be attributed to borrowing from COJ or WOJ either, because they undergo very old separate diachronic developments (contraction as opposed to COJ and WOJ fusion), cf. PJn *-ke -a^{m}ba > Pre-WOJ *-ki -a^{m}ba > WOJ *-keba* '-AVATTR.COND', and PJn *-ke -a^{m}ba > EOJ *-kaba* '-AVATTR.COND'. Therefore, although a direct genetic relationship is unsupported, the relationship between EOJ dialects and Ryukyuan languages and dialects is notable. Therefore, here, although I do not follow Thorpe (1983: 236)'s tree, I do view some words attested in EOJ dialects as potentially borrowed from a Pre-RY dialect.

2.2 The standard Proto-Japonic model

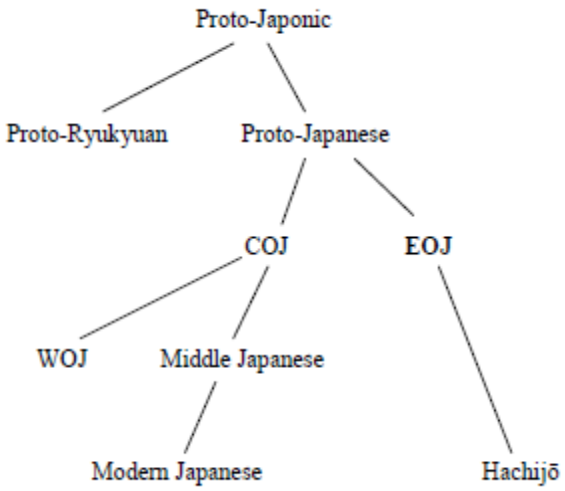

Figure 2: Kupchik (2011: 7)'s tree of the Japonic language family

According to Figure 2, the direct descendents of Proto-Japonic (PJ) are PR and Proto-Japanese (PJn). This tree is the most commonly accepted view of the Japonic language family. Regarding periodization, Proto-Japonic was likely spoken during the first centuries, CE (Pellard 2008: 135). It is likely that Proto-Ryukyuan and Proto-Japanese split from Proto-Japonic around the 4th or 5th centuries. Unfortunately, it is only until the 8th century that documents with lengthy text are attested. Among them, is the Man'yōshū, a poetic anthology which attests throughout its volumes of poems, WOJ, COJ, and EOJ. The majority of poems written in EOJ come from books 14 and 20 of the Man'yōshū, the 20th, being the last book in the anthology. Fairly recently, a dissertation was written on the EOJ dialects (Kupchik 2011). For my comparison of Ryukyuan data in this thesis, in almost all cases, EOJ data is taken from Kupchik (2011). A somewhat similar work on Ryukyuan was done much earlier, by Dr. Maner Thorpe (Thorpe 1983). However, Thorpe (1983) limited his study to data from the 20th century. The earliest Ryukyuan data comes from the 15th and 16th centuries, unlike WOJ, COJ, and EOJ data which are all attested by the 8th century, however the 15th and 16th century Ryukyuan data is not nearly as clear as Modern Ryukyuan data, due to limitations in orthography. Despite this, Thorpe (1983) uses 40 different Ryukyuan varieties, some being distinct languages, to reconstruct PR. From the tree in figure 2, it can be seen that PR is sister to PJn. However, for this thesis, my goal is to compare Ryukyuan data to EOJ data from the

mid 8th century, which requires an equivalent 8th century Ryukyuan reconstruction. Therefore, where possible, I attempt to reconstruct an intermediate stage after PR and before Modern Ryukyuan dialects, which I call Pre-RY. In many cases, this is realized by PR reconstructions that have reconstructed mid vowels *e and *o where Pre-RY has both high *I and *u and mid vowels *e, *o. The reason for me reconstructing both high and mid vowels for Pre-RY, is to explain Modern Ryukyuan forms that attest preservation of older mid vowels from PR, while at the same time explaining vowel raising in a great number of Ryukyuan dialects and languages as well. It seems very likely that Pre-RY that I reconstruct actually represents more than one single Ryukyuan dialect. As EOJ attests as many as 11 unique dialects, I would not be surprised if the Ryukyuan branch of Japonic also had a similar number of dialects around the 8th century. My main focus in comparing reconstructed Pre-RY and attested EOJ, concerns three sound changes as mentioned above, denasalization, fortition, and vowel raising. To provide a context for these changes, I discuss developments from PJ into PJn and PR. This is discussed below.

2.3 Vowels in Proto-Japonic and their reflexes in daughter dialects

Here, I will only discuss the development of PJ vowels and vowel sequences, with nasal + obstruent sequences, voiced initial obstruents *b- and *d-, and EOJ and Pre-RY raised mid vowels discussed in section 2.4. I limit myself to these three features because they are most relevant to the comparison of EOJ dialects with Ryukyuan. The separate developments in PR and PJn of these three features will be referred to in detail below.

PJ *e and *o are thought to have raised to i_1 and u in WOJ, but some in some cases they may have been preserved as e_1 and o_1:

WOJ	<	PJ	>	PR
i_1	<	*i	>	*i
i_2	<	*ui	>	*i
i_2 (e_2)	<	*əi	>	*e
e_2	<	*ai	>	*e
e_1	<	*ia	>	*e
e_1	<	*iə	>	*e
i_1 (e_1)	<	*e	>	*e
u	<	*u	>	*u
o_1	<	*ua	>	*o
o_1	<	*au	>	*o
u (o_1)	<	*o	>	*o
o_2	<	*ə	>	*o
a	<	*a	>	*a

Table 2: Diachronic developments of PJ vowels

Figure 3: Pellard (2008: 136)'s diachronic vowel developments from PJ

Figure 3, taken from Pellard (2008: 136) details the development of PR and WOJ vowels from PJ vowel sequences[2], and the diphthong [aj]. For clarity, WOJ i_1 is [i], i_2 is [ɨ], e_1 is [e], e_2 is [əj], o_1 is [o], and o_2 is [ə]. The reason for labeling WOJ like this is because phonetic values for syllables are secondary discoveries based on WOJ phonogram research. The values I use for these vowels are based on the research done by Miyake (2003). WOJ $o_{1/2}$, $e_{1/2}$, and $i_{1/2}$, are part of a transliteration system that makes no claims about narrow phonetics. Returning to our discussion of diachronic vowel developments, using the phonetic values of Miyake (2003), it can be seen from this table, that WOJ, a descendent of PJn, monophthongizes *ui and *əi > i_2 [ɨ][3, 4] and centralizes *ai > e_2 [əj]. It should be noted however, that EOJ

[2] Pellard (2011) refers to these sequences as diphthongs but only the PJ diphthong *aj has been preserved as a diphthong, whereas *uj, *əj, *ia, *iə, *ua, *uə, and *au have all monophthongized. Kupchik (2011: 38) suggests that *uj, *əj, and *oj were neither vowel sequences nor diphthongs, but instead, vowels with coda glides. In Kupchik's analysis *uj, *əj, and *oj have coda glides and *ia, ua, and possibly *au are vowel sequences. However, Ainu *kamuj* < PJn *kamuj 'deity' suggests that *uj was at least at one point, a diphthong. *ai may have simply been an exception to all the other vowel sequences/diphthongs and was retained until a later stage in the language when fusion was no longer active. I think it is likely that *uj had cases where it was a vowel sequence between two syllables *-u.i-, and also cases where it was a diphthong *uj. This may have been the case for *əj, *ia, *iə, *ua, *uə, and *au as well, although in the end the vowel sequences and diphthongs all merged identically based on the properties of their V_1 and glide/V_2. For purposes of consistency, in this thesis I will call all cases of *V_1V_2 vowel sequences.

[3] The vowel sequence *oj also developed into [ɨ] (Vovin 2011)

[4] EOJ dialects SIK, KAP, PI, TO, KAK, SI, MU, SA, MI, SIP, and COJ dialect SIN all attest either [Cɨ] or [Ci] < *Cɨ. EOJ dialects SU and MI do not have any attestations of this development however. Suruga appears to have deleted the second vowel in *oj after raising it to *uj, e.g. *kopoj-si > *kopusi- > SU *kupusi-* 'be longing-'. Kupchik (2011: 853) argues that TO and SU reflect a single dialect that he calls

dialects attest deletion of one of the vowels in a vowel sequences rather than yielding a new vowel different from either one which WOJ does, e.g. *ia > e. PR, like WOJ, has vowels resulting from fusion of earlier vowel sequences, although PR fusion yielded different vowels than PJn fusion did in some cases. The developments from PR into Modern Ryukyuan dialects and languages are particularly relevant to this thesis where PR and Pre-RY are reconstructed, and therefore I have added Figure 4 below, a chart from Thorpe (1983: 32) showing the vowel correspondences between PR and Modern Ryukyuan languages and dialects. The most important PR development for this thesis is the raising of PR mid vowels *e and *o to [i] and [u] which happened some time before the present.

Töpo-Suruga, but TO attests *kopɨ- which seems counter to this classification because then this single language had *uj > u as well as *uj > ɨ.

Table 1. Vowels in Ryūkyūan

location \ vowel	*i	*e	*u	*o	*a
Kikai Shi.	i	ï, I, i	u		a
Kikai A					
Ōshima N, Ya., Yu.		ï, I, e	u, ï	u, o	
Ōshima Ko., Kakeroma Sh.			u, ï, I		
Tokunoshima In., Ka.	i, I	I, ï, e	u, I		
Yoron Mugiya	i, ï		u, ï		
Okierabu Te., Se., Yoron C, Ieshima, Okinawa Ok., He., Yon., Su., Na., S	i		u, i		
Taketomi					
Ikema, Irabu Sa., Ishigaki Ob.	i, ï		u, ï	u	
Ōgami, Miyako O, Yo., U, Tarama Nak., Ishigaki Is., K, Kobama, Aragusuku, Hateruma	ï, i				
Hatoma	i, u		u, i		
Kuroshima	i, ï		u, i, ï		
Iriomote So., Yonaguni			u, i		

Figure 4: Thorpe (1983: 32)'s Proto-Ryukyuan vowel reflexes in Ryukyuan languages

Figure 5: The Inariyama tumulus sword

Regarding periodization, the fact that an early sword inscription[5] (Figure 5), the Inariyama tumulus sword inscription, attests both C*ɨ*[6] and C*əj*[7] (as early as 471 CE, but possibly as late as 651 CE: Murayama and Miller 1979: 412), suggests that this inscription is written in late Proto-Japanese or early COJ/WOJ, as it could not have been written in PR, because PR has [e] where COJ/WOJ developed [əj] (cf. figure 3), and following my analysis of EOJ later in this thesis, EOJ did not have /*ɨ*/. The date of the Inariyama tumulus sword therefore suggests that PR split sometime before the inscription, i.e. sometime prior to 471~651 CE[8], otherwise we would have to assume that PJn split early, and PR very late, which does not seem likely given the significant amount of variation found in Ryukyuan languages. Therefore,

[5] This picture of the Inariyama tumulus sword and its inscription is taken from http://upload.wikimedia.org/wikipedia/commons/5/5d/Inariyama_sword.JPG

[6] *takapat*ɨ *wakəj* (多加披次獲居) and *tasak*ɨ *wakəj* (多沙鬼獲居) 'personal names', and sik*ɨ* (斯鬼) 'placename'.

[7] *o wakəj əmi* (乎獲居臣上), *tejə kari wakəj* (弖已加利獲居), *takapat*ɨ *wakəj* (多加披次獲居), and *tasak*ɨ *wakej* (多沙鬼獲居) 'personal names'.

[8] cf. Serafim (2003: 474) "[the proposal of] a movement into the Ryukyus [from Kyushu] even as late as 900 CE … in no way removes the necessity for that dialect to have split from the dialect of Nara [(=WOJ)] before the beginning of history." Serafim (2003: 474)

combining the date of the Inariyama tumulus inscription with Pellard (2008: 135)'s dating of Proto-Japonic to "[the] first centuries CE", it seems likely that PR split sometime between 300~600 CE. This is a valuable date because the Man'yōshū was written during the middle of the 8th century. This means that any contact that may have occurred between Ryukyuan speakers and EOJ speakers happened 150~450 years after PR split, leaving plenty of time for post-PR innovations in Ryukyuan dialects by the mid 8th century (my Pre-RY). To reconstruct Pre-RY, I used Thorpe (1983) whenever possible, as it is the richest source of Ryukyuan languages attested in a single place. However, Thorpe (1983) only reconstructs a select group of words. Therefore, for the remaining words I wanted to reconstruct, I used Hirayama (1986, 1988) primarily, for Northern and Southern Ryukyuan data, and when I could not find a given word there, I consulted Hirayama (1992-1993), Nakamatsu (1987), and/or Sakihara (2006).

2.4 Denasalization, fortition, and vowel raising

As mentioned above, the three changes I am focused on are denasalization, fortition, and vowel raising. Although the main underlying question of this thesis is whether or not EOJ was influenced by Pre-RY, I do not believe this can actually be definitely answered by the data in this thesis alone. However, what this thesis does do, is evaluate all cases of denasalization, fortition, and vowel raising in EOJ as to whether or not they might be borrowed from a Pre-RY dialect rather than innovative EOJ sound changes.

The first change I look at in my data section is denasalization as attested by spelling variances or differences between EOJ poems and WOJ poems. It is helpful to know first, however, that the prenasalized obstruents that became devoiced in EOJ by the mid 8th century are from the same origin as the ones attested in COJ and WOJ, and the ones reconstructed for PR. It can therefore be said that both PR and PJn had prenasalized obstruents. It is widely believed that these prenasalized obstruents arose from the lenition of nasal (PJ *n, *m) and voiceless obstruent sequences, PJ *-Np-, *-Nt-, *-Ns-, *-Nk- into a prenasalization feature on the following obstruent, most likely also voicing it as well, yielding PR and PJn *-^{m}b-, *-^{n}d-, *-^{n}z-, and *-^{ŋ}g-. Although Thorpe (1983) does not reconstruct prenasalized obstruents for PR, the recent work, Vovin (2012), presents clear evidence for the reconstruction of prenasalized obstruents in PR, I hold the view that in PR, prenasalized obstruents had yet to denasalize, but by the

Pre-RY stage, some Pre-RY dialects may have denasalized, as evidenced by a large number of modern dialects that attest no traces of remaining nasality in various words. Therefore it seems denasalization of PR prenasalized obstruents is a reliable feature of not only Pre-RY, but also EOJ dialects, perhaps due to contact between them.

Regarding fortition, I follow the view that Proto-Japanese lenited PJ *b- > w and *d- > ^{n}z, but that PR preserved PJ *b and PJ *d, although there are also those who follow the view that PJ *w > PJn *w, PR *b, with a similar process of fortition yielding PR *d. For example, I reconstruct PR *bakare- 'be.separate-', from PJ *bakare-, which I view lenited to *wakare- in PJn, therefore explaining OJ *wakare-* as it is found in WOJ and EOJ. As I follow the lenition view for PJ *d- as well, where EOJ attests [^{n}z] and [d] for the same word, I consider the source of this variation either EOJ innovative fortition of PJn *^{n}z, or borrowing from Pre-RY *b-, *d-, although retention in EOJ of earlier PJ *b-, *d- may also be possible. These developments will be discussed more in the section on fortition.

Finally, regarding vowel raising, EOJ attests many words that appear to have raised the mid vowels [e] and [o]. As Ryukyuan languages and dialects attest the same cases of vowel raising (cf. figure 4) in numerous cases, EOJ forms where vowels appear to have been raised may in fact be borrowed forms from Pre-RY forms that are reconstructable with high vowels. Before proceeding to discuss the data sections regarding denasalization, fortition, and vowel raising however, I briefly discuss extralinguistic data in support of contact between EOJ speakers and Pre-RY speakers, and the orthographic system used in the Man'yōshū.

CHAPTER 3

8TH CENTURY JAPAN

3.1 Eastern Old Japanese provinces and Kyushu

Figure 6 below is a map of Japan demarcated by provinces[9]. The dark blue provinces represent EOJ speaking provinces. The light orange province represents Sinano province, a COJ speaking province. The light purple provinces represent provinces which have no poetry attested for them, and are thus unknown. The two dark purple provinces are Töpotuapumi province and Suruga province. These are differentiated as they likely split from Proto-Japanese at a different time than EOJ dialects, COJ dialects, and WOJ dialects. The darker orange province is Nara, the 8th century capital of Japan, from which all WOJ data comes from, and the green provinces compose the island of Kyushu where I believe Pre-RY speakers likely resided.

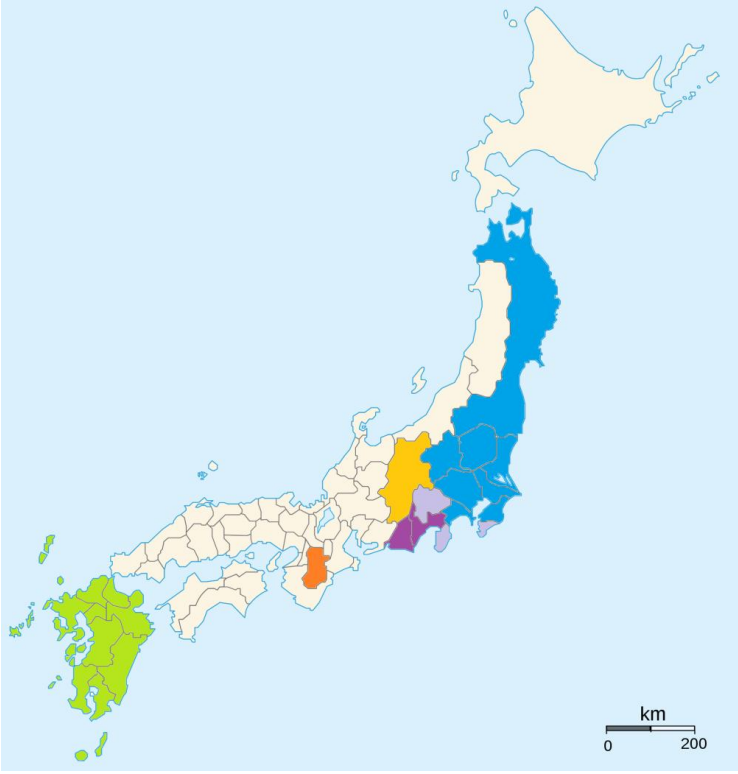

Figure 6: A map of the provinces of 8th century Japan

[9] This map takes geographical data from Kupchik (2011: 2) with Kyushu specified. This map originally comes from http://commons.wikimedia.org/wiki/File:Provinces_of_Japan.svg and the idea to use this map also came from reading Kupchik (2011: 2).

In Kyushu, there was a regional government headquarters called Dazaifu, which served to oversee trade between the mainland and Japan (Nussbaum 2005: 150). Kyushu had many provinces, and border guards from Eastern Japan were often sent by the government to serve in provinces in on the island of Kyushu[10] during military service, which under the Ritsuryō code was defined as one year, but could be extended to three years or possibly even longer than that (Mizushima 1986: 66 as cited in Vovin 2012: 53). I believe that it was in Kyushu that contact between EOJ speaking border guards and Pre-RY speakers occurred. Then, as EOJ speaking border guards returned to eastern Japan after their service ended, I think it is likely that they would have brought back to Eastern Japan features and words borrowed from their time in Kyushu with Pre-RY speakers. From there, I believe diffusion of denasalization of prenasalized obstruents, underlying /b-/ and /d-/, and vowel raising throughout Eastern Japan began.

It is not proven without a doubt that Ryukyuan speakers resided in Kyushu in the 8th century. However, before discussing the evidence in support of their presence in Kyushu, it is helpful to know first the geographical location of modern Ryukyuan languages. The map below[11] (Figure 7) shows the Ryukyu island chain which extends from modern day southern Kagoshima[12] prefecture (including Ōsumi, Tokara, and Amami islands) to the southernmost part of Okinawa prefecture (which includes the islands of Okinawa, Miyako, and Yaeyama).

[10] Vovin 2013: 60
[11] Taken from http://upload.wikimedia.org/wikipedia/commons/c/c6/Location_of_the_Ryukyu_Islands.JPG
[12] 'Japan' in this map is the southern tip of Kyushu as seen in the province map earlier.

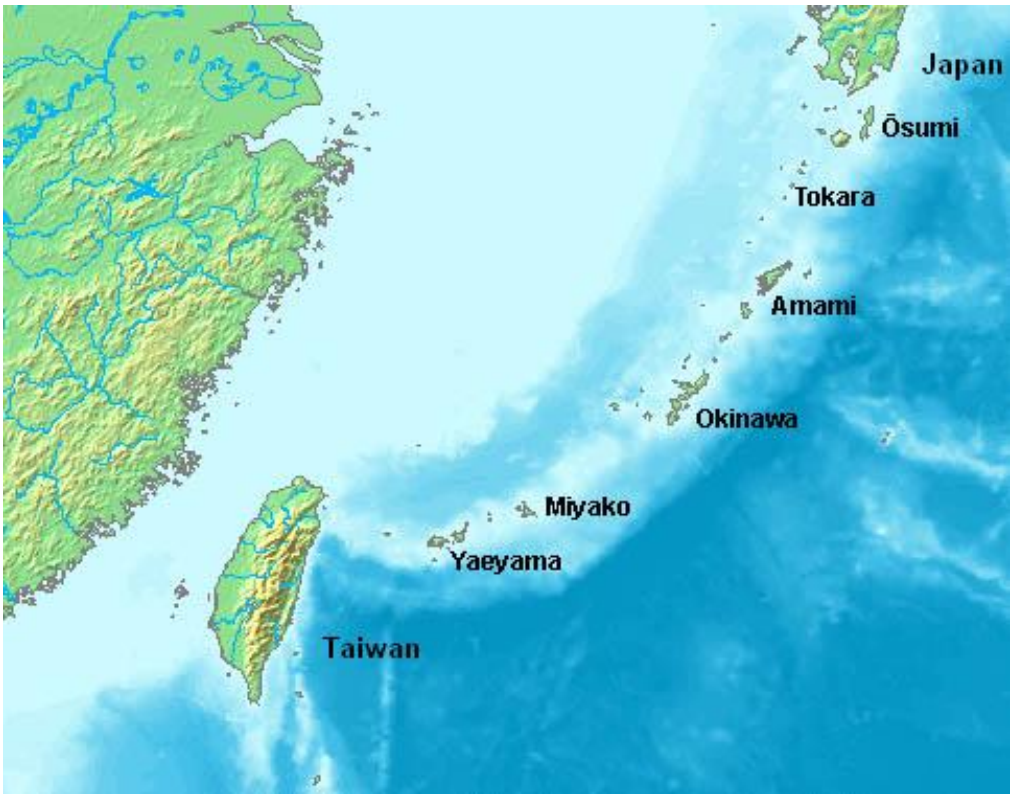

Figure 7: A map of the Ryukyuan islands

Regarding the history of Ryukyuan speakers, that they came from Southern or Western Kyushu has been an assumption made by many (Uemura 1977 and Asato and Doi 1999 as cited by Serafim 2003: 472). Contrary to this however, is that mainland Japan in the end of the 6th century is known to have had four groups of people, of which none have been proven to be a group that could later be the Ryukyuans. In Eastern and Northern Japan the Ainu were prevalent, in central Japan near modern day Osaka were the Yamato (Japanese), and in Central and Southern Kyushu were the Kumaso and Hayato people (Kerr 2000: 24). Uemura (1977) suggested the idea that the Hayato people spoke Ryukyuan, and Serafim (1994) supported this idea at the time, but has recently refuted it in Serafim (2003) based on linguistic factors. Despite this, anthropological evidence suggests “physical characteristics of the Ryukyuans show that they belong to a group which may be called “South Kyushu and Ryukyuan” peoples” (Kerr 2000: 27). Additionally, it is widely accepted that speakers of Proto-Japonic came from the Korean peninsula and landed in Kyushu based on the spread of agriculture. As Proto-Japonic is the mother language of both Proto-Ryukyuan and Proto-Japanese, it is quite possible that Proto-Ryukyuan split while

in Kyushu. The alternative of PR splitting in the Ryukyuan islands is not supported, as agricultural evidence suggests a path of migration from the Korean peninsula to Kyushu, and not only is PR definitely a Japonic branch, according to Serafim (2003: 474) who discusses an archaeological and anthropological study by Asato and Doi (1999), "[there exists] increasing [archaeological and anthropological] evidence of a relatively late movement [starting around 900 CE] into the Ryukyus [from Kyushu] by a new group, … who would eventually merge with the previous inhabitants of the Ryukyus to become what we now call Ryukyuans". Asato and Doi (1999) suggest among other things, one reason why they believe it is in fact the Ryukyuan people who are the new group, is that the habitation sites of this group are the same as habitation sites found in the Ryukyus (Serafim 2003: 465).

In conclusion, linguistic evidence of a Pre-RY language remaining in Kyushu for a time is controversial, e.g. spoken by the Hayato people. However, as for archaeological and anthropological findings, evidence suggests that a Ryukyuan-like group moved into the Ryukyus from Kyushu starting around 900 CE, which brought people, culture, and language to the Ryukyus (Asato and Doi 1999 summarized by Serafim 2003: 465). Because I make the assumption that Pre-RY speakers were in Kyushu during the time border guards were stationed there in the mid 8th century and potentially before then as well, a contact hypothesis seems plausible. As such contact would have been around 150 years before 900 CE (recall the Man'yōshū was compiled around the mid 8th century), archaeological and anthropological evidence supports this contact hypothesis between Pre-RY speakers and EOJ border guards.

CHAPTER 4

THE MAN'YŌSHŪ

4.1 The poetic anthology

The Man'yōshū, which in Japanese means 'Anthology of Myriad Leaves', consists of 4,516 poems in total and is believed to have been compiled in 759 CE or soon after, although poems contained in it can be dated from the late 6th century all the way to the mid 8th century (Vovin 2009: 1). It is believed to have been compiled mostly by Otomo-no Yakamochi, a mid to late Nara period politician and poet. For this thesis, I only look at EOJ poems in the Man'yōshū by means of Kupchik (2011), an EOJ corpus and grammar of the EOJ dialects. As the vast majority of EOJ poems in the Man'yōshū are contained in its 14th and 20th books, these are the two sections of the Man'yōshū that Kupchik (2011) limited his dissertation to.

4.2 Man'yōshū orthography

Technically speaking, the Man'yōshū is written entirely in Chinese characters (sinographs). Linguistically, these sinographs are used to write poetry Classical Chinese and dialects of Old Japanese, i.e. WOJ, COJ (Sinano province), and EOJ. Classical Chinese is sometimes used for poems themselves, although in other cases, it is limited to the prefaces and postscripts of poems. By the time of the compilation of the Man'yōshū, a tradition of writing had already been well established in Japan. This began through the help of allies on the Korean peninsula, who helped transmit the Chinese writing system to the Japanese people. The first Japanese scholars who were taught Chinese writing were likely taught Old Chinese pronunciations and meanings of sinographs by speakers of Old Korean. However, by the time of the Man'yōshū, sinographs had already come to be pronounced by the Japanese for their Early Middle Chinese values filtered through Japanese phonotactics. At this point, it is important to note that not all written sinographs in the Man'yōshū correspond to sound values. Some in fact, only convey meaning, e.g. 木 in some cases, simply means 'tree' with no intended phonetic value. These cases are of little value to the reconstruction of sound changes, as they do not convey any useful phonological information. Sinographs used solely to express meaning but not sound, are called semantograms.

Sinographs used solely to express sound and not meaning, are called phonograms. The sinograph 木 can also be read as a phonogram for the syllable [kə] or [kɨ], intended simply to convey one of these two syllables, and not the meaning of 'tree' at all. The latest and most comprehensive work on the phonetic values of phonographs used in WOJ texts is Miyake (2003), which compares reconstructed Early Middle Chinese phonogram values, Late Middle Chinese phonogram values, and Sino-Xenic phonogram data to the same phonograms attested in OJ texts. Applying principles of linguistic typology, frequency based statistics, and internal developments in the history of the Japonic language family as well, Miyake reliably reconstructs the phonetic values of WOJ. These WOJ phonetic values, are then used by Kupchik (2011) to analyze EOJ 'misspellings' of words attested with different spellings in WOJ, which Kupchik then analyzes as evidence of sound change provided the evidence is convincing, e.g. EOJ *ipa*, *ipi*, *ipe* 'home', compared to WOJ *ipe* 'home', which Kupchik concludes is indicative of a proto-form *ipia, as the fusion of PJn *ia > WOJ e is well known in WOJ, and contraction of V_1 and V_2 of V_1V_2 vowel sequences such as PJn *ia is well attested in EOJ dialects. In regards to 'misspellings' or spelling variances that are relevant to this thesis, variances in spelling of prenasalized obstruents, e.g. 波 [pa] for 婆 [^{m}ba] (evidence of denasalization), stops for glides/fricatives, such as 波 [pa] for 和 [wa] and 登 [tə] for 叙 [^{n}zə] (evidence of fortition), and variances in spelling of 家 [Ce] and 古 [Co] by means of 支 [Ci] and 久 [Cu] (vowel raising), are the main cases of 'misspellings' or spelling variations discussed here. Cases such as 'home' described above also have special significance in this thesis however, as they are tied to vowel raising. For example, 已比 *ipi* may be a raised form of 伊敝 *ipe*, or a contracted form of *ipia.

4.3 Man'yōshū scribes and poets

Poems collected in the Man'yōshū were composed by people from lower, middle, and upper classes in 8th century Japanese society. Despite this, as this thesis only focuses on EOJ poems and not Man'yōshū poems as a whole, I will only discuss the poetry that attest EOJ in books 14 and 20. As for books 14 and 20, it is debatable whether the poems were written by a speaker/speakers of EOJ or a speaker/speakers of WOJ. In a recent theory put forth by Vovin (2012: 13), Vovin claims that book 14 may have been compiled by a person from Eastern Japan, "who was bilingual in both WOJ and some

EOJ dialect that was his native tongue … [a] 'Border guards commander' … [who] recorded these [book 14] poems[,] or collected them as they were - representing various classes of his contemporary society in the Eastern provinces - starting with peasants and ending with provincial nobility." If we follow this theory, the spelling variances found throughout EOJ poetry were likely the result of the intention to express EOJ dialectal features under the confines of established, WOJ phonotactic-friendly phonetic values that were associated with phonograms. Alternatively, if the transcriber of poems was a WOJ speaker, this speaker would likely have been educated regarding spelling tradition, and could have intentionally spelled words in the various ways we see in books 14 and 20, to convey dialectal features in the EOJ poetry. Either way, the variations in spelling attested in books 14 and 20 appear to be a reliable means of deciphering EOJ phonology. One implication from Vovin (2012: 13)'s theory, is that not all EOJ poetry in book 14 was written by border guards or their wives. As above I have hypothesized that contact occurred between border guards and Pre-RY speakers in Kyushu, this may appear to be problematic at first. However, as the practice of border guards being stationed in Kyushu had been going on for some time by the mid 8th century, I believe this leaves sufficient time for borrowed Pre-RY features to have diffused in EOJ provinces.

In conclusion, it is clear that EOJ poetry was composed by EOJ speakers, however, whether they were the actual ones who actually recorded the poetry on a scroll or some such material, or if it was a WOJ speaker who did, is debatable. One implication that comes from Vovin (2012: 13)'s theory is that not all EOJ poetry came from border guards and their wives, but also potentially from EOJ speaking peasants, as well as other people living in eastern provinces in Japan. This may seem at odds with my theory of contact between border guards and Pre-RY speakers in Kyushu, because it is possible that not all poetry in book 14 came from border guards or their wives. I will discuss this in greater detail in the following section.

4.4 Contact with subsequent diffusion

As mentioned above, my theory of contact between Pre-RY speakers and EOJ speakers is limited to border guards, as only they can reliably be placed in Kyushu in the 8th century. However, as

noted above, it is entirely possible that not all EOJ poetry in book 14 came from border guards or their wives. Despite this possibility, I think even if it is true, diffusion can explain any cases of Pre-RY borrowings that may exist in non-border guard EOJ poetry. After border guards fulfilled their service in Kyushu, it is likely that they returned to Eastern Japan, and thereby spread features picked up in Kyushu throughout their home province. Considering border guards from all provinces except Mitinöku province attest EOJ poetry, I think it is quite possible that consider all EOJ data potentially a source of Pre-RY influence, with border guard poetry potentially evidencing direct contact, and non-border guard poetry potentially evidencing indirect contact via diffusion from border guards who brought Pre-RY features to Eastern Japan.

CHAPTER 5

DENASALIZATION AND FORTITION

5.1 Denasalization of prenasalized obstruents

In this section I look at data in Kupchik's EOJ corpus for evidence of the denasalization of pre-nasalized medial obstruents (*-^{m}b-, *-^{n}d-, *-^{n}z-, *-^{ŋ}g- > -b-, -d-, -z-, -g-). Following this introduction to the data, I provide an exhaustive list of spelling variations suggestive of denasalization for each EOJ province (all data from Kupchik 2011), including poems of unknown dialects (UD) which Kupchik includes because each one exhibits at least one EOJ feature, e.g. variant spelling or a form unattested in WOJ. The EOJ dialects with many cases of CV : WOJ ^{N}CV are most convincing of denasalization. EOJ provinces exhibit anywhere from a single case of denasalized spelling in an entire province's corpus, to as many as 19 cases of denasalized spelling (CV : ^{N}CV and ^{N}CV : CV combined). Dialects with fewer attested denasalized spellings may have had denasalized obstruents, but due to the small size of their provinces' corpora, nothing further can be determined with confidence. An analysis of these spelling variations as simple misspellings is also possible, although not confirmable.

Regarding the distribution of prenasalized obstruents in EOJ dialects, there are no utterance or word initial cases of pre-nasalized obstruents in WOJ, except in the loanword [^{n}gətə] 'be.like' (Kupchik 2011:75). As WOJ and EOJ are both commonly believed to have descended from Proto-Japanese, it would make sense to assume that they have similar phonotactics in this regard.

Contrary to WOJ phonotactics, EOJ data forms written with word-initial prenasalized phonograms makes it seem possible that they may be either retentions from early stages of EOJ dialects, i.e. *#^{N}C$_{[+voice]}$V or *#C$_{[+voice]}$V > #^{N}C$_{[+voice]}$V or #C$_{[+voice]}$V, or recent developments from earlier voiceless obstruents, e.g. *#C$_{[-voice]}$V > *#^{N}C$_{[+voice]}$V or *#C$_{[+voice]}$V. However the discussion required for this is lengthy as well as controversial and will therefore be dealt with after the data presentation.

Below, I consider the controversial spelling variation EOJ ^{N}CV : WOJ CV only after presenting the less controversial EOJ CV : WOJ ^{N}CV cases which point directly to either orthographic compromise for [b] or misspelling. The spelling variation EOJ ^{N}C : WOJ ^{N}C points to either the preservation of prenasalized obstruents or a merge of /^{N}C/ and /C$_{[+voice]}$/ resulting in /C$_{[+voice]}$/ spelled in phonograms as ^{N}CV or C$_{[-voice]}$V,

provided evidence of denasalization exists in a given dialect. To test whether ^{N}CV : ^{N}CV appears to consist of a prenasalized and voiced obstruent merged spelling for a single phoneme /($C_{[+voice]}$V/ or whether ^{N}CV : ^{N}CV simply reflects the preservation of prenasalized obstruents, I also include in parentheses the (CV : ^{N}CV) ratio for comparison, which represents cases of denasalization. The idea behind this is that if the ratios of ^{N}CV : ^{N}CV are close to the ratios of CV : ^{N}CV, it seems possible that ^{N}CV may actually reflect /$C_{[+voice]}$V/, i.e. a non-nasalized voiced obstruent phoneme, assuming all CV : ^{N}CV also reflect an EOJ dialect's single /$C_{[+voice]}$V/ phoneme and the merge has completed. This or these /$C_{[+voice]}$V/ would then correspond to WOJ /$^{N}C_{[+voice]}$V/ phoneme(s).

In addition to denasalization, I also have a table for cases of intervocalic voicing attested in the EOJ corpus. As some Ryukyuan languages attest intervocalic voicing, I will analyze these forms for evidence of a Ryukyuan contact hypothesis as well. I view the spelling variation EOJ ^{N}CV : WOJ CV as intervocalic voicing in EOJ. I believe phonograms were used this way to make salient the voicing of particular syllables at the cost of the superficial nasality. I view this as a solution to the problem that would occur if voiceless phonograms were used instead, which would likely betray the intended voiced obstruent without nasality and be read as a voiceless obstruent.

After discussing the frequency of denasalization, I compare each word that attests denasalization and intervocalic voicing with its reflex in Ryukyuan for the reflexes I could find in Ryukyuan. If a reconstructed Ryukyuan reflex matches closely to the EOJ word, then I conclude that 8th century Ryukyuan may have been a source of this form. If a given Ryukyuan reflex could not be found, I leave the etymology of the Ryukyuan form, provided it existed, up to future research. If a given Ryukyuan reflex does not exhibit denasalization or intervocalic voicing where the EOJ form does, I do not count it as a possible source of the EOJ form.

5.1.1 Denasalization spelling variation

(In support of denasalization)

pV : ^{m}bV

	KAK	KAP	MI	MU	PI	SA	SIK	SIN	SIP	SU	TO	UD

Cases	1	2	1	3	3	1	1	2	3	3	0	0
Total	21 cases in Kupchik's EOJ corpus											

Kupchik does not accept the reconstruction of *^{m}b > b in any EOJ dialect, even sporadically. Thus it must be assumed that he classifies these as misspellings. His main reason for rejecting such reconstructions is that ^{N}CV : ^{N}CV cases are more common than CV : ^{N}CV. We will see in the comparative data that this is not always the case however. As there is no way to prove these variations are misspellings, I am open to the alternative analysis of denasalization, whether it was regular, sporadic, or both, i.e. regular in some dialects, and sporadic in others. In the comparative section of (pV : ^{m}bV) ^{m}bV : ^{m}bV we will see the regularity of *^{m}b > b denasalization in each dialect in relation to all ^{m}bV syllables attested in each dialect.

tV : ^{n}dV

	KAK	KAP	MI	MU	PI	SA	SIK	SIN	SIP	SU	TO	UD
Cases	1	6	0	1	2	0	4	0	6	5	0	0
Total	25 cases in Kupchik's EOJ corpus											

There are a few (4) more cases of tV : ^{n}dV than pV : ^{m}bV throughout the corpus. Kupchik reconstructs *^{n}dV > dV for three dialects, Suruga, Simotupusa, and Kamitupusa. As we will see below, there are more cases of CV : ^{N}CV than ^{N}CV : ^{N}CV in these dialects, although many other dialects disregarded by Kupchik come close too (SU, SIP, and KAP). In the comparative section of (tV : ^{n}dV) ^{n}dV : ^{n}dV we will see the regularity of *^{n}d > d denasalization in each dialect in relation to all ^{n}dV syllables attested in each dialect.

sV : ^{n}zV

	KAK	KAP	MI	MU	PI	SA	SIK	SIN	SIP	SU	TO	UD

Cases	0	0	0	0	3	0	0	0	1	1	0	0
Total	5 cases in Kupchik's EOJ corpus											

Out of all the CV : NCV obstruent initial phonograms, [s] : [^{n}z] is the least attested across the EOJ dialects. It is not surprising that Kupchik does not reconstruct *^{n}z > z for any EOJ dialect. However, when we look at the comparative data below, we will see that some dialects have more cases of sV : ^{n}zV than ^{n}zV : ^{n}zV, which is a convincing argument for denasalization. In the comparative section of (sV : ^{n}zV) ^{n}zV : ^{n}zV we will see the regularity of *^{n}z > s denasalization in each dialect in relation to all ^{n}zV syllables attested in each dialect.

kV : ^{ŋ}gV

	KAK	KAP	MI	MU	PI	SA	SIK	SIN	SIP	SU	TO	UD
Cases	0	2	0	0	3	1	3	1	8	5	2	0
Total	25 cases in Kupchik's EOJ corpus											

There are as many cases of kV : ^{ŋ}gV as there are tV : ^{n}dV, which Kupchik has reconstructed denasalization for. Two dialects that definitely stand out here are Simotupusa (SIP) and Suruga (SU), although Kupchik only reconstructs *^{ŋ}gV > g for Simotupusa. This is due to the fact that Simotupusa has 4 more cases of denasalization spelling variation (kV : ^{ŋ}gV) than it has ^{ŋ}gV : ^{ŋ}gV, but Suruga has 4 fewer cases of denasalization spelling variation (kV : ^{ŋ}gV). Although I agree with Kupchik regarding the denasalization of the velar obstruent, I will argue below, e.g. for the denasalization of the labial obstruent, that just because one variation is more common does not necessarily rule out the possibility of denasalization (40% or higher seems to be a likely sign of regular denasalization in at least some dialects of a province, although the limited amount of data can easily manipulate percentages). In the comparative section of (kV : ^{ŋ}gV) ^{ŋ}gV : ^{ŋ}gV we will see the regularity of *^{ŋ}g > g denasalization in each dialect in relation to all ^{ŋ}gV syllables attested in each dialect.

(High prenasalized to prenasalized ratios support ^{N}C retention)

(pV : ^{m}bV), ^{m}bV : ^{m}bV

	KAK	KAP	MI	MU	PI	SA	SIK	SIN	SIP	SU	TO	UD
Cases	(1), 4	(2), 6	(1), 2	(3), 10	(3), 3	(1), 1	(1), 8	(2), 2	(3), 2	(3), 2	(0), 4	(0), 0
%	(25%), 75%	(25%), 75%	(33%), 66%	(23%), 77%	(50%), 50%	(50%), 50%	(11%), 89%	(50%), 50%	(60%), 40%	(60%), 40%	(0%), 100%	(0%), 0%
Total	(20), 44 cases in Kupchik's EOJ corpus (31%), 69%											

Although not a single dialect attests more than 3 cases of pV : ^{m}bV, I believe it is still possible that denasalization could have happened. First of all, it is likely multiple dialects existed in a single province, e.g. Simotupusa$_1$, Simotupusa$_2$, Simotupusa$_3$. Additionally, it is quite possible that denasalization began in one part of a province and simply had not spread throughout that entire province by the time the poems from MYS books 14 and 20 were written. Third, the ^{m}bv : ^{m}bv spellings may reflect some [bV] and some [^{m}bV]. This could be due to sporadic denasalization in one or more dialect in a single province, or the result of a regular denasalizing dialect's data mixed with a dialect yet to denasalize where all this data is classified as a single province's poetry, thereby making the province as a whole appear to not have denasalized regularly. Additionally, instead of sporadic innovative denasalization, it may simply be the case that some dialects acquired a few words with /b/ due to constant areal contact with surrounding provinces that had /b/ (minimally sporadically, and maximally as the result of [^{m}b) merging to [b]. As 32% of WOJ ^{m}bV syllables are attested in EOJ dialects as pV, I disagree with Kupchik's rejection of *^{m}bV > b in all EOJ dialects, sporadically or regularly. It is hard to say much with only a few attestations, however, if PI, SA, SIN, SIP, and SU percentages reflect these dialects' actual lexicons' percentage of denasalized forms, *^{m}b > b denasalization as a process of EOJ dialects in the 8th century would be quite convincing. Because of the ratios of these dialects, some or all cases of their ^{m}bV syllables may reflect underlying

[bV] as the orthography may have merged based on the high proportion of pV : ^{m}bV denasalization cases. As mentioned above, Kupchik does not reconstruct *^{m}b > b for a single dialect. He does reconstructs *^{n}d > d for Suruga, Simotupusa, and Kamitupusa however. For *^{n}d > d, the percentages of denasalization to retention (as scene below) for these provincial dialects all have higher tV : ^{n}dV than ^{n}dV : ^{n}dV. However, this same circumstance is seen for pV : ^{m}bV in Simotupusa and Suruga, with Pitati, Sagamu, with Sinano coming in close behind (50% of WOJ ^{m}bV are spelled as pV for these three dialects). Granted the few cases of attestations are a problem, it seems unlikely that not even a single one is representative of the broader lexicon of each province had it been written down and preserved into our modern age. In conclusion, I reconstruct *^{m}b > b regularly in at least a few Pitati dialects, Sagamu dialects, Sinano dialects, Simotupusa dialects, and Suruga dialects. The remaining provinces I reconstruct sporadic *^{m}b > b for, where I view these forms as likely being due to early areal influence from the regular *^{m}b > b denasalizing dialects, resulting in their lower ratios. Because the number of attestations are so low for some dialects, in particularly MI, it may be the case that MI has regular denasalization in some of its dialects and the low ^{m}bV/pV phonogram occurrence masks this. Without more data from MI and other dialects however, I must make my judgments based on the data that is attested. Regarding misspellings, it does seem possible that scribal errors could account for some of the variations. However, I do not think misspellings occurred so often as to bias as much as 32% of the data for ^{m}bV syllables. I would think those who passed along the poems or the compilers themselves were aware to some extent of the EOJ dialects and permitted such spellings so long as they reflected meaningful poetry. Regarding the areal spreading of cases of *^{m}b > b denasalization, whether or not Ryukyuan speakers may have been the cause rather than EOJ speakers will be examined at the conclusion of this section on denasalization.

(tV : ^{n}dV), ^{n}dV : ^{n}dV

	KAK	KAP	MI	MU	PI	SA	SIK	SIN	SIP	SU	TO	UD
Cases	(1), 15	(6), 3	(0), 2	(1), 8	(2), 8	(0), 4	(4), 5	(0), 0	(6), 2	(5), 3	(0), 6	(0), 0
%	(6%)	(66%	(0%),	(11%	(20%	(0%),	(44%	(0%),	(75%	(63%	(0%),	(0%),

	, 94%	), 33%	100%	), 89%	), 80%	100%	), 56%	0%	), 25%	), 38%	100%	0%
Total	(25), 56 cases in Kupchik's EOJ corpus (31%), 69%											

Here, Simotupusa, Suruga, and Kamitupusa have convincingly high ratios with reliable amounts of attestations, unlike the sole cases in Kamitukeno or Muzasi. I agree with Kupchik's reconstruction of regular *^{n}d > d in Suruga, Simotupusa, and Kamitupusa, however I go further and claim that regular *^{n}d > d likely occurred in at least a few Simotukeno dialects (44% tV : ^{n}dV) as well. In these provinces, I find it likely that some or all cases of ^{n}dV represent [dV] based on the high number of denasalization attestations. For the remaining provinces, like in the (pV : ^{m}bV), ^{m}bV : ^{m}bV section, I attribute the remaining dialects' variation (tV : ^{n}dV) to areal influence, except possibly the single case in Kamitukeno which could be a misspelling, and where the variation is not attested at all, where I find it unlikely that denasalization occurred. Whether or not Ryukyuan speakers may have been the cause of some or all cases of *^{n}d > d rather than EOJ speakers will be examined at the conclusion of this section on denasalization.

(sV : ^{n}zV), ^{n}zV : ^{n}zV

	KAK	KAP	MI	MU	PI	SA	SIK	SIN	SIP	SU	TO	UD
Cases	(0), 7	(0), 2	(0), 1	(0), 1	(3), 2	(0), 4	(0), 5	(0), 1	(1), 0	(1), 4	(0), 2	(0), 0
%	(0%), 100 %	(0%), 100%	(0%), 100%	(0%), 100%	(60%), 40%	(0%), 100%	(0%), 100%	(0%), 100%	(100 %), 0%	(20%), 80%	(0%), 100%	(0%), 0%
Total	(5), 29 cases in Kupchik's EOJ corpus (15%), 85%											

The data for this variance is highly problematic because there are so few attestations. Simotupusa only attests this once, and attests no ^{n}zV syllables, but this may simply be due to the fact that these syllables did not occur regularly in any poems at all. The lack of attestations of ^{n}zV syllables biases Simotupusa's percentage to 100% when in reality, denasalization may not have been regular in 100% of Simotupusa's syllables, as such a high degree of regularity is not only hard for a language to achieve, but perhaps even harder for a language to maintain, given its surrounding provincial dialects that likely still had prenasalized obstruents whether in their core vocabulary or the periphery vocabulary where denasalization was regular. Because Simotupusa has only one I propose denasalization for it, but leave whether or not it was sporadic or regular open to debate. I propose regular denasalization in at least some PI dialects. Also, I find it likely that some or all cases of ^{n}zV represent [zV] in PI based on the high number of denasalization attestations to prenasalized attestations. The remaining dialects which attest denasalization (SIP, SU) I explain by proposing areal influence as the cause of their denasalized sV [zV] syllables that correspond WOJ ^{n}zV. As mentioned above for the other obstruents, I will discuss the likelihood of 8th century Ryukyuan being the source of areal influence of *^{n}z > z rather than EOJ dialects at the conclusion of this section on denasalization.

(kV : ^{ŋ}gV), ^{ŋ}gV : ^{ŋ}gV

	KAK	KAP	MI	MU	PI	SA	SIK	SIN	SIP	SU	TO	UD
Cases	(0), 22	(2), 9	(0), 0	(0), 20	(3), 12	(1), 18	(3), 10	(1), 4	(8), 4	(5), 9	(2), 10	(0), 0
%	(0%), 100%	(18%), 82%	(0%), 0%	(0%), 100%	(20%), 80%	(6%), 94%	(23%), 77%	(20%), 80%	(67%), 33%	(36%), 64%	(17%), 83%	(0%), 0%
Total	(25), 118 cases in Kupchik's EOJ corpus (17%), 83%											

As mentioned above, Kupchik only reconstructions denasalization of * ^{ŋ}gV > g for Simotupusa. I agree with Kupchik for the denasalization of the prenasalized velar obstruent. Simotupusa data supports denasalization *^{ŋ}g > g more than any other province. Suruga comes close to my threshold mentioned earlier of 40% to be met in order to warrant regular denasalization in at least some of a province's dialects. It is hard to say in this case whether the Suruga data reflects regular denasalization in a few dialects or strong areal influence from Simotupusa, e.g. 2 cases of SU kV : ^{ŋ}gV are the possessive particle –ka (WOJ -^{ŋ}ga), which is attested as -ka [-ga] 5 times in Simotupusa. The remaining dialects which have this variance I propose have /g/ due to areal influence. At the end of the denasalization section I will discuss whether or not this areal influence could have been from 8th century Ryukyuan rather than EOJ.

(Prenasalized or voiced initial obstruents or misspellings)

(^{m}b : p)

	KAK	KAP	MI	MU	PI	SA	SIK	SIN	SIP	SU	TO	UD
Cases	0	0	0	0	0	0	0	0	0	0	0	0
Total	0 cases in Kupchik's EOJ corpus											

As this variance is not attested it may seem that there is nothing to be said here, however it may be revealing that this variance is not found a single time. If it were found, it might suggest word initial prenasalized labial obstruent syllables. That we do not find any word initial prenasalized obstruents is in line with the PJ lenition theory, which says all PJ *b- became w- in PJn, therefore leaving perhaps no word initial *b- in any later stages of Old Japanese dialects (WOJ, COJ, EOJ). It is interesting that we find this variance in obstruents of different place of articulation however, e.g. 5 cases of ^{n}d-, 1 case of ^{n}z-, and 8 cases of ^{ŋ}g-.

(^{n}d : t)

	KAK	KAP	MI	MU	PI	SA	SIK	SIN	SIP	SU	TO	UD

Cases	0	0	0	0	0	1	0	0	0	2	0	0
Total	3 cases in Kupchik's EOJ corpus											

This variance is attested 3 times. The lenition theory of PJ, for some scholars (Martin 1987, Unger 1993), extends to *d- as well (*d- > j-), although evidence for this change is controversial and hard to accept as justification for reconstructing Proto-Japonic *d- from WOJ j-. These variances may be fossils of Proto-Japonic's word-initial voiced obstruents that were later lost in its daughter languages. Suruga attests ⁿdukur-ir-u 'make-PROG-ATTR', and ⁿdukusi 'place name'. The latter is a loan from EMC *trjuwk tsjeX (Kupchik 2011:129), which could not have been in Proto-Japonic. Because ⁿdukusi is attested before a syllable with nasality in its poem (an-e '-DES-IMP'), I view this as a case of progressive nasal spreading from [an-e] to *tukusi > ⁿdukusi. As for the root 'to make', it cannot have been caused by nasal assimilation however. The context in which this word appears is [poməj-te ⁿdukur-ir-u tənə-nə ᵑgətə] 'bless.INF-SUB make-PROG-ATTR mansion-GEN like' (Vovin 2013: 89, although Vovin does not count the spelling variation that Kupchik does). The closest nasal feature to the verb 'make' has one intermediate syllables, and it would make much more sense for it (-te > -ⁿde) to be prenasalized than 'make-'. Because this change does not seem due to phonetic environmental, *t > d word initially is awkward, and initial *d- is problematic, I view this as a case of misspelling. The sole case in Sagamu is ⁿduma 'spouse' (WOJ tuma 'id.'). Here, regressive assimilation from the nasality in *ma* of *ⁿduma* appears likely, as it is not preceded by a syllable with nasality in its context (t-u ⁿduma 'DV-ATTR spouse', from Vovin 2012: 60-61, although Vovin does not count the spelling variation that Kupchik does). As we will see in the velar section, there are many cases of regressive and progressive assimilation of nasality.

(ⁿz : s)

	KAK	KAP	MI	MU	PI	SA	SIK	SIN	SIP	SU	TO	UD
Cases	0	0	0	0	0	0	0	0	0	0	0	0
Total	0 cases in Kupchik's EOJ corpus											

There are no cases of word initial ⁿz to WOJ s.

(ᵑg- : k-)

	KAK	KAP	MI	MU	PI	SA	SIK	SIN	SIP	SU	TO	UD
Cases	2	0	0	0	0	3	1	1	1	0	0	2
Total	8 cases in Kupchik's EOJ corpus											

ᵑg- : k- is the most well attested ᴺCV : CV type spelling variation. The 8 cases are ᵑga- 'be.thus-' (WOJ ka-) and ᵑgure 'darken.NML' (WOJ kure) from KAK, ᵑga 'QPT' (cf. WOJ ka 'id.'), ᵑgapa 'river' (cf. kapa 'id.'), and ᵑgo- 'come-' (WOJ kə-) from Sagamu (ᵑgapa is also attested in a poem from an UD), ᵑgapara 'riverbank' (cf. WOJ kapara 'id.') from Simotukeno, ᵑgami 'deity' (cf. WOJ kamɨ 'id.') from Sinano, and ᵑgamo 'EPT' (cf. WOJ kamo 'id.') from Simotupusa. These are all explainable as prenasalizations of prior voiceless sounds due to assimilation of the [+nasal] feature from a preceding or following nasal (except 'EPT'), like the cases in Suruga with [ⁿd] (SU *ⁿdukusi* and 'wife' SU *ⁿduma*). The nouns ᵑgapara and ᵑgapa are attested in contexts with the genitive -n(ə). ᵑgapa may be the result of a fused genitive marker with the noun kapa 'river', leading to ᵑgapa, a form denoting the property of the river e.g. mijanəse ᵑgapa 'Miyanəse river' (Kupchik 2011:725). ᵑgapa seems to always be attested in contexts surrounded by genitive markers or nasal consonants. The word 'deity' is often attested with the genitive as well, ᵑgami is attested inside the compound noun proper name putapoᵑgami 'personal name' in Simotukeno, which probably had at one point the genitive -nə between putapo and kami. The case of ᵑgami in Sinano is connected to the genitive marker -nə, so perhaps the prenasalization of k > ᵑg is regressive assimilation of [k] to the [+nasal] feature of [m] or of [-nə] (the onset of the genitive). Because of the surrounding nasal elements, these forms are best interpreted as the result of nasal assimilation rather than archaic retention of PJ *g or simple misspellings. As for the verbs, ᵑga- 'be.thus' is attested after the word naᵑgɨ 'water leek', so it is likely that ᵑga- gained its nasality from the preceding word as a result of feature spreading of the nasal feature. ᵑgure is attested after the genitive nə, a similar case to ᵑga- in that a preceding nasal causes the nasal feature to spread to the onset of the next syllable.The question particle ᵑgamo in Simotupusa is attested following the word -unam-u 'TENT2-ATTR' (Vovin 2012:56), where the [m-u] likely

spread the [+nasal] feature. The verb ᵑgo- is found following kəkəᵐba ‘extremely’, where the [+nasal] feature of kəkəᵐba has likely passed its feature on to *ko-, making it ᵑgo-. The last case, the emphatic particle ᵑgamo is preceded by ma-kətə, and followed by ware-ni, so it was likely simply a misspelling since neither of its neighboring syllables had nasal elements.

(-ᴺC- : -C-)

	KAK	KAP	MI	MU	PI	SA	SIK	SIN	SIP	SU	TO	UD
Cases	1 ⁿdV	1 ⁿdV	0	0	1 ⁿdV	0	1 ᵐbV	1 ᵑgV	0	1 ⁿdV	3 ⁿdV	1
Total	10 ᴺCV cases in Kupchik’s EOJ corpus, (1 ᵐbV, 7 ⁿdV, 1 ⁿz, 1 ᵑgV)											

I analyze these spelling variations as intervocalic voicing. There are ten cases of intervocalic voicing in the EOJ corpus. In the section below, I will analyze these forms as well as the cases of denasalization for whether or not these changes could have been caused from contact with an 8th century Ryukyuan language.

5.1.2 Denasalization cases in EOJ and Ryukyuan reflexes

Kamitukeno province denasalization attestations

(voiceless orthographically = phonetically voiced but not prenasalized)

KAK pik-apa ‘pull-COND’

Thorpe (1983) does not reconstruct this word for PR, and I was unable to find the verb ‘pull’ in Hirayama (1986, 1988), but I was able to find it in Hirayama (1992: 4257-4258). I reconstruct Pre-RY *pik-. This is based on Southern Ryukyuan Taketomi *pik-* (cf. *pik-anu* ‘pull-NEG’), Tarama *pˢɨt-*/*pˢɨk-* (cf. *pˢɨtˢ-ɨtal* ‘pull-PST’, *pˢɨk-aɴ* ‘pull-NEG’), Nagahama *ssabᶻɨf-*, *ssabᶻɨk-* (cf. *ssabᶻɨf-utal* ‘pull-PST’, *ssabᶻɨk-aɴ* ‘pull-NEG’), Ikema-Hirara *hif-*, *hik-* (cf. *hif-utai* ‘pull-PST’, *hik-aɴ* ‘pull-NEG’), Hirara, *pˢɨk-* (cf. *pˢɨk-ˢɨtaᶻɨ* ‘pull-PST’, *pˢɨk-aɴ*, ‘pull-NEG’), and in Northern Ryukyuan Naze and Motobu, *çik-* (cf. *çik-aɴ* ‘pull-NEG’). Next, I will reconstruct ‘-COND’ in Pre-RY.

Thorpe does not reconstruct this morpheme for PR, but it is found in Old Ryukyuan as *-aba* '-COND' (Vovin 2009: 735). Vovin also notes this form is also attested in Kumajima as *-aba*, and in Shuri as *-aa*. Unfortunately these are both Northern Ryukyuan dialects, meaning no Southern Ryukyuan data is provided. Based on this, I reconstruct Northern Ryukyuan *-a$^{(m)}$ba, as the Old Ryukyuan data is ambiguous whether it represents a prenasalized or simple voiced obstruent. As Northern Ryukyuan split from Pre-RY sometime after the mid 8th century, I cannot reconstruct Pre-RY *-aba without evidence from Southern Ryukyuan. Therefore I reject the devoicing of KAK *-aba* as potentially from Pre-RY due to a lack of Ryukyuan evidence.

KAK -mate '-TERM'

This postposition is only found in Shuri Ryukyuan (Vovin 2005: 202). Without other Ryukyuan attestations I cannot reconstruct this form back to even Northern Ryukyuan.

Kamitupusa province denasalization attestations

(voiceless orthographically = phonetically voiced but not prenasalized)

KAP sipa 'bush'

Thorpe (1983) does not reconstruct this word for PR, and no forms attested in Hirayama (1986, 1988) are cognate with KAP *siba*. Additionally, it appears this word is either unattested in Ryukyuan or attested as a recent loan from Standard Japanese (Hirayama 1992-1993: 2323). Therefore, I cannot reconstruct a PR and/or Pre-RY form here.

KAP tapi 'journey'

Thorpe (1983) does not reconstruct this word for PR, and the forms attested in Hirayama (1986, 1988, 1992-1993) are almost all entirely identical to the Standard Japanese form. I therefore count the Ryukyuan forms as clear loans from Standard Japanese and do not reconstruct a PR and/or Pre-RY form here.

KAP nate 'caress.INF'

The WOJ and EOJ infinitive *-i* is attested in Old Ryukyuan as *-i* and Shuri as *-i* (Vovin 2009: 714), as well as in various other Ryukyuan languages, e.g. Hateruma *mir-i-bo-ha-Ø-n* 'see-INF-want-VLZ-NPST-RLS', which means '(I) want to see (it).', where I analyze what was originally glossed as 'MED'

(medial sequence) as an infinitive ‘INF’ (data from Aso 2011: 205). Therefore, I agree with Vovin (2009: 716)’s reconstruction of PJ *-i. However, I could not find the verb ‘caress’ in Ryukyuan, so I cannot reconstruct a Pre-RY form.

KAP ite ‘go out.INF’

Thorpe does not reconstruct this word for PR, but I was able to find the verb ‘go out’ in Hirayama (1986: 496, 1988: 449-450). I reconstruct PR *i^{n}de, and Pre-RY *i^{n}di-, *i^{n}dir-. This reconstruction is based on both Ryukyuan data as well OJ and PJ reconstructions. Regarding Ryukyuan data, Hirayama (1986, 1988) provide the following: Southern Ryukyuan IS *id-*, *idir-* (cf. *id-unu* ‘go out-NEG’, *idir-uɴ* ‘go out-NPST’, HA *nd-*, *ndir-* (cf. *nd-unu* ‘go out-NEG’, *nd͡ʒir-uɴ* ‘go out-NPST’), YO *ndi*, *tundir-* (cf. *ndi* ‘go out.NPST’, *tundir-uɴ* ‘go out.NPST’, and Northern Ryukyuan WA *ʔi^{d}ʒ-*, *ʔi^{d}ʒir-* (cf. *ʔi^{d}ʒir-aɴ* ‘go out-NEG’, *ʔi^{d}ʒ-itaɴ* ‘go out-PST’), CH *ʔi^{d}ʒ-*, *ʔi^{d}ʒir-* (cf. *ʔi^{d}ʒir-aɴ* ‘go out-NEG’, *ʔi^{d}ʒ-itaɴ* ‘go out-PST’), and TOK *ʔɪ^{d}zɨr-*, *ʔɪ^{d}zɨ-* (cf. *ʔɪ^{d}zɨr-aɪ* ‘go out-NEG’, *ʔɪ^{d}zɨ-tɪ* ‘go out-PST’). In WOJ, this word is *i^{n}de-*. WOJ [i] goes back to PJ *i, WOJ [^{n}d] goes back to PJ *-nt- or *-mt-, and WOJ [e] goes back to either PJ *ia, *iə, or *e. Therefore, the possible PJ forms based on the WOJ form are *intia-, *imtia-, *intiə, *imtiə-, *inte-, and *imte-. Because PJ *i > PR *i, PJ *-nt-, *-mt- > PR *^{n}d, and PJ *ia, *iə, *e > PR *e, based on reconstruction-internal knowledge, PR *i^{n}de- seems possible. This form is also remarkably similar to Pre-RY *i^{n}di-. The final consonant in *i^{n}dir- might be a later innovation, although as it is so widespread in both Southern and Northern Ryukyuan, I must reconstruct it for Pre-RY as well. The biggest problem with the Pre-RY reconstruction is the nasality which I consider mandatory based on the YO reflex. Therefore, although the PR form is a close match to KAP, because even the Pre-RY form has nasality, I reject borrowing here and view KAP *ide-* as innovative denasalization.

KAP sote <attested twice> ‘sleeve’

Thorpe (1983) does not reconstruct this word for PR, but I was able to find it in Hirayama (1986: 416, 1988: 382). I reconstruct PR *so^{n}de based on figure 3, and Pre-RY *sude, *ʃude. The Pre-RY form is based on Southern Ryukyuan IS *sudi*, HA *ʃʃi:*, *-ʃʃi*, YO *sudi:*, and Northern Ryukyuan WA *sudi*, CH *sudi:*, and TOK *ʃudɪ*, *ʃude*. As the Pre-RY reconstruction does not attest nasality, it is possible that the PR form underwent denasalization before vowel raising of *o > u took place, which would yield a form identical to

KAP. However, because in the reconstruction above PR *i^{n}de- > Pre-RY *i^{n}di-, *i^{n}dir- attests raising before denasalization, and the reconstruction here PR *so^{n}de > Pre-RY *sude, ʃude attests vowel raising after denasalization, timing early Ryukyuan vowel raising and denasalization appears controversial. Therefore I tentatively consider KAP *sode* as innovative denasalization.

KAP -təmə [-dəmo] '-CONC'

Only Old Ryukyuan attests *-domo*. However, it is not found in any modern Ryukyuan dialects (Hokama 1995: 462 as cited by Vovin 2009: 753). Because of this Vovin (2009: 753) concludes that it is a borrowing from mainland Japanese. Without any evidence contrary to this, I do not reconstruct a Pre-RY form for this word.

KAP -tə '-CONC'

This variant is not found anywhere in Ryukyuan or Old Ryukyuan (Vovin 2009: 753). Therefore, a Pre-RY reconstruction is not possible.

KAP -ka '-POSS'

Both Shuri and Miyako Ryukyuan attest *-ga* '-POSS' (Vovin 2005: 124-125). Although reconstruction based on only two varieties of Ryukyuan is not ideal, I tentatively reconstruct Pre-RY *ga-. As this is a match with KAP, I consider the KAP form a possible borrowing from Pre-RY.

KAP -k-imo '-POSS-beloved.girl'

As I could not find a reflex for imo in Ryukyuan, a Pre-RY reconstruction is not possible.

Mitinöku province denasalization attestations

(voiceless orthographically = phonetically voiced but not prenasalized)

MI musup-as-an-e 'tie-HON-DES-IMP'

Thorpe (1983) does not reconstruct these morphemes for PR, but the verb 'tie-' is documented in Hirayama (1986, 1988) and Vovin (2009) mentions Ryukyuan data for the functional morphemes. Based on Hirayama (1986: 707-708, 1988: 624-625) and Vovin (2009: 854, 672, 654), I reconstruct Pre-RY *musu^{m}b-??-ana-e, cf. Southern Ryukyuan IS *musub-* (cf. *musub-anu* 'tie-NEG'), HA *musɨp-* (cf. *musɨp-anu* 'tie-NEG'), YO *mumb-* (cf. *mumb-anuɴ* 'tie-NEG'), Northern Ryukyuan WA *musub-* (cf. *musub-aɴ* 'tie-

NEG'), CH *musub-* (cf. *musub-aɴ* 'tie-NEG'), TOK *muʃub-* (cf. *muʃub-aɴ* 'tie-NEG'). Additionally, regarding the honorific auxiliary *-as-*, it is attested in Old Ryukyuan a few times as *-as-*. Regarding the desiderative auxiliary *-an-*, it is attested in Old Ryukyuan and modern dialects as *-ana*. Regarding the imperative *-e*, it is found in Old Ryukyuan, modern Shuri as *-e,* and in Hateruma as *-i*. Because available data on the honorific auxiliary is limited to Old Ryukyuan, I cannot reconstruct it for Pre-RY due to a lack of evidence from other Ryukyuan varieties. As this, combined with the nasality attested in the YO data further differentiate the Pre-RY form and the MI form, I consider the MI form a case of innovative denasalization.

Muzasi province denasalization attestations

(voiceless orthographically = phonetically voiced but not prenasalized)

MU -pa '-COND' <attested twice>

This form has already been analyzed above. I follow my earlier analysis here as well and reject this word as a possible borrowing from Ryukyuan.

MU tapi 'journey'

This form has already been analyzed above. I follow my earlier analysis here as well and reject this word as a possible borrowing from Ryukyuan.

MU sote 'sleeve'

This form has already been analyzed above. I follow my earlier analysis here as well and reject this word as a possible borrowing from Ryukyuan.

Pitati province denasalization attestations

(voiceless orthographically = phonetically voiced but not prenasalized)

PI -pa '-COND'

This form has already been analyzed above. I follow my earlier analysis here as well and reject this word as a possible borrowing from Ryukyuan.

tatipana 'mandarin.orange'

I could not find this word in my Ryukyuan data sources. Instead of *tatibana*, *mikan* was attested (Hirayama 1992-1993).

PI nar-upe ‘make.a.living-DEB’

The debitive -ube is only attested in Classical Ryukyuan and not Old Ryukyuan (Vovin 2009: 879). Additionally it is not attested in any other Ryukyuan dialects. As Classical Ryukyuan was influenced by Middle Japanese, it was likely a loan into Classical Ryukyuan. I follow Vovin in counting the debitive auxiliary verb as a borrowing.

PI kati ‘rudder’

I could not find this word in my Ryukyuan data sources.

PI -mate ‘-TERM’

This form has already been analyzed above. I follow my earlier analysis here as well and reject this word as a possible borrowing from Ryukyuan.

PI -s-u <attested twice> ‘-NEG-INF’

This form has already been analyzed above. I follow my earlier analysis here as well and reject this word as a possible borrowing from Ryukyuan.

PI ip-as-u ‘say-NEG-INF’

This form, WOJ *(a)^{n}z-u* has already been analyzed above. I follow my earlier analysis here as well and reject this word as a possible borrowing from Ryukyuan.

PI asikara ‘placename’

I could not find this word in my Ryukyuan data sources. Given that it is a placename this is not surprising. Additionally, Vovin (2009c: 3) argues that this word is a loanword from Old Ainu *áskar-i ‘pure-place’.

PI kək-i ‘row-INF’

I was able to find this word in Hirayama (1986: 281, 1988: 283). I reconstruct Pre-RY *ko^{ŋ}g-i, *kod-i cf. Southern Ryukyuan IS *ko-*, *kug-* (*ko-:nu* ‘row-NEG’, *kug-uɴ* ‘row-NPST’), HA *kwa-*, *kug-* (*kwa-:nu* ‘row-NEG’, *kug-e:taɴ* ‘row-PST’), YO *kuŋ-*, *kud-* (*kuŋ-un* ‘row-NPST’, *kud-jaɴ* ‘row-PST’), Northern Ryukyuan WA, CH *fug-*, *fud-* (*fug-aɴ* ‘row-NEG’, *fu^{d}-ʒuɴ* ‘row-NPST’), TOK *kug-*, *kud-* (*kug-aɴ* ‘row-NEG’,

ku^{d}*-ʒaɴ* ‘row-PST’). Both nasality and the vowel in the first syllable of each form are problems for this word. Depending on when PJ *ə > PR *o, the first syllable may have been identical, but the nasality in the Pre-RY form supported by YO data eliminates this word as a possible borrowed form. Therefore, I consider PI *kəg-i* a case of innovative denasalization.

PI tuk-i ‘tell-INF’

I could not find this word in my Ryukyuan data sources.

Sagamu province denasalization attestations

(voiceless orthographically = phonetically voiced but not prenasalized)

SA kəkəpa ‘extremely’

This form is attested as kəkəpa and kəkə^{m}ba in WOJ. As Kupchik notes, it is difficult to determine which form is original and which is secondary. Additionally, I was unable to find this word in my Ryukyuan data sources.

SA sukəj ‘sedge’

I could not find this word in my Ryukyuan data sources.

Simotukeno province denasalization attestations (voiceless orthographically = phonetically voiced but not prenasalized)

SIK supe ‘way.of.doing’

I could not find this word in my Ryukyuan data sources.

SIK mitura ‘male.hair’

I could not find this word in my Ryukyuan data sources.

SIK sote ‘sleeve’

This form has already been analyzed above. I follow my earlier analysis here as well and reject this word as a possible borrowing from Ryukyuan.

SIK -təmo ‘-CONC’

This form has already been analyzed above. I follow my earlier analysis here as well and reject this word as a possible borrowing from Ryukyuan.

SIK tə [də] ‘FPT’

This form doubles as a case of both denasalization and fortition (< *^{n}zə). It is also well attested in both Old Ryukyuan and modern Ryukyuan dialects (Vovin 2009: 1196). It is found in Old Ryukyuan as *to*, *ru*, *ro*, Shuri as *du*, and Miyako as *du*. WOJ attests *sə* and *^{n}zə*, and WOJ ə goes back to PJ *ə, which means the PJ form was potentially *Nsə, *sə, *zə, *Ndə, or *də, being that fortition and lenition theories aside from PJ *b- are not well supported, and voicing is also somewhat unclear in some cases. What this means for the PR form, is that either fortition of a fricative occurred yielding early PR *də, or prenasalization of *tə > *^{n}də occurred. Either way, following Pellard (2008: 136), all PJ *ə > PR *o. If denasalization of *^{n}də > də occurred before PJ *ə > PR *o, then this particle could be the source of EOJ’s strangely sporadic *də*. However, at present I think not enough is known about the timing of PJ *ə > PR *o and PR *^{n}d > d. Therefore I tentatively reject this word as a possible borrowing due to the lack of a reliable reconstruction.

SIK -ka ‘-POSS’

This form has already been analyzed above. I follow my earlier analysis here as well and accept this word as a possible borrowing from Ryukyuan.

SIK kək-i ‘row-INF’

This form has already been analyzed above. I follow my earlier analysis here as well and reject this word as a possible borrowing from Ryukyuan.

SIK nakisa ‘waterfront’

I could not find this word in my Ryukyuan data sources.

Sinano province denasalization attestations

(voiceless orthographically = phonetically voiced but not prenasalized)

SIN -pa ‘-COND’

This form has already been analyzed above. I follow my earlier analysis here as well and reject this word as a possible borrowing from Ryukyuan.

ti-pa japur-u ‘thousand-rock-crush-ATTR’, (cf.)

I was unable to find this word (which is a poetic term) in my Ryukyuan data sources.

SIN -ka ‘-POSS’

This form has already been analyzed above. I follow my earlier analysis here as well and accept this word as a possible borrowing from Ryukyuan.

Simotupusa denasalization attestations

(voiceless orthographically = phonetically voiced but not prenasalized)

SIP -pa ‘-CONJ’

Not to be confused with the conditional *-(a)ba*, this is the conjunctive *-ba*. This form is well attested in Old Ryukyuan as -ba (Vovin 2009: 745). However, Old Ryukyuan orthography being unclear in regards to nasality, this may be -^{m}*ba*. Amami *-ba* and Miyako *-ba* ‘id.’ (Vovin 2009: 745-746) support a reconstruction of Pre-RY *-ba. The real question here is when did denasalization happen in Ryukyuan languages. It is likely that it happened at different times in different languages and dialects, and possibly starting with a given place of articulation before others. Because both Northern Amami and Southern Miyako do not attest nasality, I tentatively reconstruct Pre-RY *ba, but further evidence is definitely needed. I tentatively accept this word as a possible borrowing into SIP from Pre-RY.

SIP inər-apa ‘pray-COND’

This form has already been analyzed above. I follow my earlier analysis here as well and reject this word as a possible borrowing from Ryukyuan.

SIP tapɨ ‘journey’

This form has already been analyzed above. I follow my earlier analysis here as well and reject this word as a possible borrowing from Ryukyuan.

SIP katu ‘gate’

I could not find this word in my Ryukyuan data sources.

SIP iture ‘which’

I could not find this word in my Ryukyuan data sources.

SIP te- /ide-/ ‘go out.INF-’

This word has already been analyzed above, although not this particular allomorph. Although I cannot verify whether or not the first vowel of this form was lost in Pre-RY, because I have already rejected its underlying form as a borrowing, I follow my earlier analysis here as well and reject this word as a possible borrowing from Ryukyuan.

SIP -tə <attested twice> ‘-CONC’

This form has already been analyzed above. I follow my earlier analysis here as well and reject this word as a possible borrowing from Ryukyuan.

SIP tə ‘FPT’

This form has already been analyzed above. I follow my earlier analysis here as well and reject this word as a possible borrowing from Ryukyuan.

SIP sir-as-umo ‘know-NEG-EXCL’

There are no cognates of PJn *-umə in Ryukyuan (Vovin 2009: 700). Therefore this form could not have been borrowed by an EOJ speaker.

SIP -ka <attested 5 times> ‘-POSS’

This form has already been analyzed above. I follow my earlier analysis here as well and accept this word as a possible borrowing from Ryukyuan.

SIP kək-i ‘row-INF’

This form has already been analyzed above. I follow my earlier analysis here as well and reject this word as a possible borrowing from Ryukyuan.

SIP kaki ‘shadow’

Thorpe (1983: 326) reconstructs PR ‘shade, reflection’ as *ka[ᵑ]ge’, *ka[ᵑ]ga’-. Although both Northern and Southern Ryukyuan languages attest high vowels in the second syllable, cf. Tamina, Oku, Hentona, and Ieshima Northern Ryukyuan *hagi* ‘id.’, and Ikema, Ōgami, Sarahama, Yonaha, Uechi, and Nakasuji Southern Ryukyuan *kagi* ‘id.’, Southern Ryukyuan Yamatoma attests *xage* (Thorpe 1983: 326).

Because Southern Ryukyuan attests a mid vowel, only Pre-RY *kage explains the distribution of Modern Ryukyuan forms. As this does not match the SIP form, I consider SIP *kagi* a case of innovative vowel raising and denasalization.

SIP janaki ‘willow tree’

Although I was able to find this word in Modern Ryukyuan, (Hirayama 1992-1993: 5203), all attestations of it are nearly identical to Standard Japanese *janagi*. Additionally, it is noted in the entry that speakers learned this word at school and that it is through this means that they know about it. Therefore I cannot use the attested forms to reconstruct Pre-RY. I consider this a case of innovative denasalization in SIP.

Suruga province denasalization attestations

(voiceless orthographically = phonetically voiced but not prenasalized)

SU tatipana ‘placename’

I could not find this form in Ryukyuan, however because it is a placename that is not surprising. This word should not be confused with the homophone WOJ *tati^{m}bana* ‘mandarin orange’. Etymologically this placename may come from *tat-i-pana ‘rise-INF-flower (rising flower)’ as deduced by the spelling of *tati^{m}bana* (立花 ‘rise-flower’) district in Shimizu city (Vovin 2013: 87-88).

SU tapi <attested twice> ‘journey’

This form has already been analyzed above. I follow my earlier analysis here as well and reject this word as a possible borrowing from Ryukyuan.

nate ‘caress.INF‘

I could not find this word in my Ryukyuan data sources.

SU -mate <attested twice> ‘-TERM’

This form has already been analyzed above. I follow my earlier analysis here as well and reject this word as a possible borrowing from Ryukyuan.

SU -tə <attested twice> ‘-CONC’

This form has already been analyzed above. I follow my earlier analysis here as well and reject this word as a possible borrowing from Ryukyuan.

SU p-as-u /ip-/ ‘say-NEG-INF’

There is a negative gerund *-ada* attested in Old Ryukyuan (Vovin 2009: 726). Vovin views this phonetic shape as being unlikely to be cognate with WOJ *-(a)^{n}z-u*, however, the correspondence between WOJ [^{n}z] : Ryukyuan d is attested in modern Ryukyuan as well, e.g. WOJ *^{n}zə* ‘FPT’ : Ryukyuan *du*, *do* ‘id.’ (Ryukyuan data from Hirayama 1992-1993: 2763). Although I think that Old Ryukyuan *-ada*, and WOJ *-(a)nz-u* are cognate with each other at least concerning the first two segments, the Old Ryukyuan form does not resemble the WOJ form enough to warrant an 8th century Ryukyuan reconstruction **az-u*. Additionally not enough Ryukyuan data attest this morpheme. Therefore I cannot reconstruct it and consider this a case of SU innovative denasalization.

SU -ka <attested twice> ‘-POSS’

This form has already been analyzed above. I follow my earlier analysis here as well and accept this word as a possible borrowing from Ryukyuan.

SU isok-i ‘hurry-INF’

I was able to find this word in Hirayama (1986: 68, 1988: 105). Based on the data from Hirayama, I reconstruct PR *iso^{ŋ}g-i, Pre-RY *isog-i, *isod-i, cf. Southern Ryukyuan IS *ʔisug-* (*ʔisug-anu* ‘hurry-NEG’), HA <no cognate attested>, YO *ʔisud-*, *ʔisuŋ-* (*ʔisud-itaɴ* ‘hurry-PST’, *ʔisuŋ-uɴ* ‘hurry-NPST’), and Northern Ryukyuan WA *ʔisod-*, *ʔisog-* (*ʔiso^{d}-ʒaɴ* ‘hurry-PST’, *ʔisog-aɴ* ‘hurry-NEG), CH <no cognate attested>, TOK *ʔiʃug-* (*ʔiʃug-aɴ* ‘hurry-NEG’). As one of the Pre-RY reconstructions matches the SU form, I consider the SU form a possible borrowing from Pre-RY.

SU -k-iməj ‘-POSS-beloved.girl’

This form has already been analyzed above. I follow my earlier analysis here as well and reject this word as a possible borrowing from Ryukyuan.

SU məjkur-i ‘encircle-INF’

I could not find this word in my Ryukyuan data sources.

Töpotuapumi province denasalization attestations

(voiceless orthographically = phonetically voiced but not prenasalized)

TO məkamə ‘DPT’

There are no cognates of the desiderative mogamo/moᵑgamo in Ryukyuan (Vovin 2009: 1234).

TO sasakə- ‘raise.INF’

I could not find any Ryukyuan reflexes of this word.

5.1.3 Intervocalic voicing cases in EOJ and Ryukyuan reflexes

(prenasalized orthographically = phonetically voiced but not prenasalized)

Kamitukeno province intervocalic voicing attestations

KAK -kaⁿde- ‘-POT-’

There are no cognates of the WOJ/EOJ *-kate-*, *-kade-* < PJn potential auxiliary *-kate- in Ryukyuan (Vovin 2009: 993). This case must be innovative intervocalic voicing in EOJ (Kamitukeno).

Kamitupusa province intervocalic voicing attestations

KAP məⁿd-i ‘hold.INF’

I was able to find this documented in Hirayama (1986: 723-724, 1988: 638-639). I reconstruct Pre-RY *mut-, *muts-i, cf. Southern Ryukyuan IS *muts-* (*muts-anu* ‘hold-NEG’), HA *mut-*, *mut͡ʃ-* (*muts-anu* ‘hold-NEG’, *mut͡ʃ-ataɴ* ‘hold-PST’), YO *mut-* (*mut-uɴ* ‘hold-NPST), and Northern Ryukyuan WA, CH *mut-*, *mut͡ʃ-* (*mut-aɴ* ‘hold-NEG’, *mut͡ʃ-an* ‘hold-PST’), TOK *mut-*, *mut͡ʃ-* (*mut-aɪ* ‘hold-NEG’, *muts-ɨ* ‘hold-PST’). One problem with this reconstruction, is that the infinitive *-i-* may be conditioning the intervocalic voicing, and the Hirayama data does not provide examples including the infinitive. Despite this, as no Ryukyuan forms in the data here attest intervocalic voicing, I consider the KAP form instead, innovative intervocalic voicing.

Pitati province intervocalic voicing attestations

PI -kaⁿde- ‘-POT-’

This form has already been analyzed above. I follow my earlier analysis here as well. This case must be innovative intervocalic voicing in EOJ (Pitati).

Simotukeno province intervocalic voicing attestations

SIK nani^{m}ba ‘placename’

I could not find this form in Ryukyuan, however because it is a placename that is not surprising.

Sinano province intervocalic voicing attestations

SIN sa^{ŋ}ga ‘slope’

I was able to find this word in Hirayama (1986: 305, 1988: 303). I reconstruct Pre-RY *saka-, cf. Southern Ryukyuan IS, YO <no entry acquired>, HA *sakamitsɨ*, and Northern Ryukyuan WA *ça:*, CH *ça:ra*, TOK *sɨra*. I doubt the TOK form is cognate with HA, WA, and CH. Additionally, I think only the first syllable in CH is cognate with HA *saka-*. Because the Pre-RY reconstruction does not attest intervocalic voicing, I consider the SIN form an innovation.

Suruga province intervocalic voicing attestations

SU -^{n}d-uru ‘-PERF-ATTR’

The perfective -t(e)- is not attested in any modern Ryukyuan dialects and is only found in Old Ryukyuan (Torigoe 1968: 183 as cited by Vovin 2009: 962). Without any evidence of its existence outside of Old Ryukyuan, it appears most likely to be a loan from Middle Japanese as Vovin (2009: 962) suggests.

Töpotuapumi province intervocalic voicing attestations

TO -təmə ‘-CONC’

This form has already been analyzed above. I follow my earlier analysis here as well and reject this word as a possible borrowing from Ryukyuan.

TO -^{n}dəki ‘REDUP (reduplication of təki=’time’)’

I was able to find this word in Hirayama (1986: 505, 1988: 457). I reconstruct Pre-RY *tukiduki, *tukɨdukɨ, cf. Southern Ryukyuan IS, HA *tukɨdukɨ*, YO *tˀutˀutˀina:*, and Northern Ryukyuan WA, CH *tukiduki*, TOK *tukɪdukɪ*. If we consider early PR *ə possible, the PR form is then *təkidəki, *təkɨdəkɨ, as WOJ ə corresponds to PJ *ə. However, this morpheme has the same problem found above for 'FPT', EOJ *də*. Therefore, due to problems regarding the timing of denasalization as well as backing of PJ *ə > PR *o, I cannot reliable reconstruct a Pre-RY form, and tentatively consider TO -^{n}*dəki* a case of innovative intervocalic voicing, likely conditioned by reduplication.

TO i^{n}duma 'leisure'

I could only find a cognate with this word in one Ryukyuan dialect, WA *ʔit͡ʃuma:* (Hirayama 1986: 618). Due to a lack of intervocalic voicing attested in WA, even if other Ryukyuan varieties attested intervocalic voicing, I would reconstruct it as a recent innovation, with WA reflecting an earlier Pre-RY form. Therefore, I consider the form in TO an innovative case of intervocalic voicing.

Unknown dialect intervocalic voicing attestations

UD pi^{n}zi 'sandbank'

I was unable to find this word in my Ryukyuan sources.

5.1.4 Conclusion to the prenasalization section

In conclusion, 12 EOJ attestations of denasalization could have been due to borrowing from a reconstructed Ryukyuan dialect, with the highest frequency form being -ga '-POSS' accounting for 10 attestations of denasalization, with the other two cases being SIP *-ba* '-CONJ' and SU *isog-i*. Evidence of borrowing here is very minimal because EOJ already had the same forms already with the only difference being that the EOJ prenasalized form may have been replaced by a Pre-RY denasalized form. It is unclear how many of these cases once existed in Ryukyuan but dropped out of usage. The greatest problem in regards to these 12 EOJ attestations, is that they require denasalization by the mid 8th century, which given available data, cannot be reconstructed reliably. Additionally, it seems odd that there are more cases of functional morphology potential borrowings than lexical potential borrowings.

5.1.5 Conclusion to the intervocalic voicing section

There were 10 cases of intervocalic voicing, but because none of them were capable of 8th century reconstructed Ryukyuan forms, they cannot be counted as evidence in support of language contact between Ryukyuan speakers and EOJ speakers in the 8th century.

5.2 Fortition

In this section I look at the data of Kupchik's corpus that attests fortition. Cases of fortition here are limited to *w > p/b/^{m}b and *s/^{n}z > t/d/^{n}d. Fortition is not a regular process in WOJ or EOJ, and because of this, these two attestations show great promise for a Ryukyuan and EOJ speaker language contact hypothesis. As has already been discussed above for the focus particle, it does not seem possible that an early PR form *də was borrowed into EOJ (SIP and SIK). The verb 'be.separate', shows greater potential as evidenced by its analysis below.

5.2.1 Fortition spelling variation

(In support of *s/^{n}z > t/d/^{n}d fortition)

tV : ^{n}zV

	SIK	SIP
Cases	1	1
Total	2 cases in Kupchik's EOJ corpus	

There is only one word that attests fortition of * ^{n}zə > də and it is the EPT *^{n}zə* (WOJ), *də* (SIK, SIP). As this word has already been discussed in the denasalization section and rejected as a potential source for EOJ *də*, there is not much to be said here.

(High prenasalized to prenasalized ratios support ^{n}z retention)

(tV : ^{n}zV), ^{n}zV : ^{n}zV

	SIK	SIP
Cases	(1), 5	(1), 0

%	(17%), 83%	(100%), 0%
Total	(2), 5 cases in Kupchik's EOJ corpus (29%), 71%	

More important than percentages here is that the case in SIK and the case in SIP both involve the same morpheme, i.e. the emphatic focus particle *də*. Fortition of s/z is not attested in any other words in the corpus, making these forms appear very out of place, as most other sporadic changes in EOJ are at least found in more than one word.

(In support of *w > p/b/^{m}b fortition)

pV : wV

	KAP
Cases	1
Total	1 case in Kupchik's EOJ corpus

There is only one word that attests fortition of *w > b and it is the verb 'be separate.INF' *pakare* (KAP) [bakare]. Regarding the glossing of this as an infinitive form rather than a nominalizer, I follow Vovin (2013: 100) and gloss it as an infinitive. I will now reconstruct the Pre-RY form of this word based on Modern Ryukyuan from Hirayama (1986: 777, 1988: 680). I reconstruct PR *bakare, and Pre-RY *bakar-, *bakarir-, *bakarɨr-, *-bakare, cf. Southern Ryukyuan IS *bagar-*, *bagarɨr-*, *-bagare:* (*bagar-unu*, *bagarɨr-anu* 'be separate-NEG', *sɨnibagare:* 'separation at death'), HA *bagar-*, *bagarir-* (*bagar-unu* 'be separate-NEG', *bagarir-uɴ* 'be separate-NPST'), YO *bagar-*, *bagarir-* (*bagar-anuɴ*, *bagarir-uɴ* 'be separate-NEG'), Northern Ryukyuan, WA, CH *wakar-*, *wakarir-* (*wakarir-aɴ* 'be separate-NEG', *wakar-itaɴ* 'be separate-PST'), TOK *wa:r-*, *wa-* (*wa:r-uɪ* 'be separate-NPST', *wa-:t͡ʃaɪ* 'be separate-want'). The PR reconstruction is based mostly on the compound noun 'separation at death' in IS Ryukyuan, which I believe preserves a very old form of the verb. I think it is likely that *bakarir-, *bakarɨr- are recent innovations, otherwise we might see *sɨnibagariri or *sɨnibagarɨri, where the final [i] would be the infinitive. As the PR form matches the KAP form, I consider the KAP form possibly an early PR loanword.

(A high labial glide to labial glide ratio supports w retention)

(pV, bV : wV), wV : wV

	KAP
Cases	(1), 19
%	(5%), 95%
Total	(1), 19 Cases in Kupchik's EOJ corpus (5%), 95%

As can be seen from the table above, the vast majority of wV syllables did not fortify to pV or bV. The fortition of *w > p, [b] is truly sporadic.

5.2.2 Conclusion to the fortition section

Given the above analysis of the two words that attest fortition, only one, the verb 'be separate-', has a Pre-RY reconstruction that could have been borrowed to explain the EOJ form. Although the borrowing of the emphatic focus particle is possible, the reconstruction is controversial at the moment and therefore I tentatively reject it. At present, denasalization data attests 12 cases of possible borrowing from Ryukyuan, and fortition data attests 1 case of possible borrowing. The next section will discuss all cases of mid vowel raising in the EOJ corpus and whether or not they can be attributed to the borrowing of a reconstructed Pre-RY form.

CHAPTER 6

VOWEL DEVELOPMENTS IN EASTERN OLD JAPANESE DIALECTS

6.1 Eastern Old Japanese diachronic vowel developments

The following sub-sections describe diachronic vowel developments in each EOJ province that attests vowel raising, including SIN which I follow Kupchik in considering a COJ speaking province. The reason for this brief interlude in data presentation from denasalization and fortition to vowel raising, is to present the contextual knowledge required for the analysis of vowel raising in data sections 5.2.1 (*e > i) and 5.2.2 (*o > u). So far, only WOJ and Ryukyuan diachronic developments have been discussed, but in order to compare the EOJ data, a discussion of EOJ diachronic developments is also vital. Diachronic developments discussed here are limited to fusion and contraction of earlier vowel sequences. I limit my discussion to these two changes because they are the only ones relevant to forms such as SU *ipi*, that may be a case of V_2 contraction of PJn *ipia, or vowel raising of *ipe > SU ipi, where I analyze *ipe as being a borrowed form from COJ/WOJ, cf. WOJ *ipe*, which fused from *ipia during the diachronic changes from Proto-Japanese to mid 8th century COJ/WOJ. To resolve such problems, I utilize contextual knowledge based on the data attested from the relevant province(s), discussed below. Directly following these discussions are the data sections 5.2.1 *e > i, and 5.2.2 *o > u. Because vowel raising is not attested in KAK, MI, or SA, I exclude descriptions of their diachronic vowel developments, and limit my discussion here to KAP, MU, PI, SIK, SIN, SIP, SU, and TO dialects.

6.1.1 Kamitupusa

In KAP, there are words that attest both fusion and both V_1 and V_2 contraction of Proto-Japanese vowel sequences. There is only one case of clear fusion, which I view as clear evidence of COJ/WOJ influence. There is only one case of V_1 contraction, but it is reliable, KAP -k-a^{m}ba '-AVATTR-COND' < *-ke -a^{m}ba. V_2 contraction is also attested reliably in one case, KAP kopu- < *kopuj- < *kopoj- or alternatively, KAP kopu- < *kopo- < *kopoj-, however other potential cases exist, KAP kopi- (which I consider phonemically and phonetically /kopi-/ and [kopi-]) < *kopoj-, or alternatively not contracted but fused in Pre-COJ/Pre-WOJ and then borrowed, KAP kopi- < COJ/WOJ kopi- < *kopoj-. The last example

of potential V_2 contraction is KAP sugɨ 'pass.INF-' (which I consider phonemically and phonetically to be /sugi-/ and [sugi-]) < *sugoj-, or alternatively not contracted but fused from Pre-COJ/Pre-WOJ and then borrowed, KAP sugɨ < COJ/WOJ sugɨ- < *sugoj-. In conclusion, clear evidence of fusion I take as evidence of definite COJ/WOJ influence in KAP. Regarding contraction, although there are more cases of V_2 contraction than V_1 in KAP, I view the functional morpheme KAP -k-a^{m}ba '-AVATTR-COND' as evidence of KAP being a primarily V_1 contracting dialect. It is surely worth noting that not a single EOJ dialect attests both V_1 and V_2 contracted functional morphemes, yet in the numerous dialects that attest both V_1 and V_2 contracted forms, either one of the two is always limited to lexical vocabulary or both are (Pitati is an exception to this if it is truly a primary V_2 contracting dialect, which following my analysis would have had V_2 contracted functional morphemes at one point, yet attests by the mid 8th century, V_1 contracted PI *-ar-* 'PROG', although I believe this to be a borrowing from SIP *-ar-* 'id.'). In my analysis of KAP data in sections 5.2.1 and 5.2.2 below, I will take into consideration the factors discussed here.

6.1.2 Muzasi

In MU, there are words that attest diachronic fusion and both V_1 and V_2 contraction of Proto-Japanese vowel sequences. The cases involving diachronic fusion I consider evidence of influence from COJ/WOJ except for *əj > e before labials and velars which is not attested in COJ/WOJ at this time. What I view as authentic MU fusion is thus limited to the single case of *əj > e before labials and velars, MU -pe '-ALL' < *-pəj < *-paj. There are cases where either borrowing from COJ/WOJ occurred, or V_2 deletion occurred. These are MU kopɨsi- < WOJ kopɨsi- < kopojsi- (where I believe the MU form may have been phonemically and phonetically [i], unless COJ/WOJ influence had been significant enough that the phoneme /ɨ/ was borrowed as well), alternatively MU kopɨsi- (/kopisi-/, [kopisi-]) < *kopojsi-, and the second case, MU kopusi- < *koposi- < WOJ koposi- (WOJ *koposi-* from Vovin 2011: 223), alternatively MU kopusi- < *kopujsi- < *kopojsi- or MU kopusi- < *koposi- < *kopojsi-. Cases where V_1 contraction are definite, are MU ipa 'home' < *ipia, and MU -k-a^{m}ba '-PST-COND' < *-ki -a^{m}ba-, and the one case where V_2 contraction is definite is limited to one case, MU paru 'needle' < *paruj (cf. WOJ pari < parɨ). Although Kupchik counts MU tuku 'moon' < *tukuj as a case of *uj > u, because it is followed by the -POSS marker

in this context, it is likely in its bound form rather than a contracted free form (cf. Vovin 2005's nominal section), and therefore I do not count it as evidence of V_2 contraction here. Before summarizing the data just mentioned, it is important to note that above I claim MU borrowed WOJ [ɨ] as MU [i]. Kupchik does not follow this view however. Regarding the borrowing of WOJ [ɨ] as MU [i], I consider it not only an aspect of Muzasi loanword phonology, but part of loanword phonology for all EOJ dialects, as in my opinion, fusion is purely a COJ/WOJ feature, aside from *əj > e. Regarding the presence of both V_1 and V_2 contracted words in MU, inconsistent developments of vowel sequences suggest contact with the various EOJ dialects, e.g. primarily V_1 contracting SIK, SIP, KAK, KAP, and possibly SA, and primarily V_2 contracting TO, SU, and PI, which likely diversified an earlier regular MU system into what it appears to be as it is attested in books 14 and 20 of the Man'yōshū. An alternative explanation to a primary contraction type, such as claiming that vowel sequences contracted V_1 and V_2 randomly in MU seems unlikely. I believe primary V_1 contracting EOJ dialects came from an earlier Proto-V_1-EOJ, and primary V_2 contracting EOJ dialects came from an earlier Proto-V_2-EOJ (with Proto-TS splitting from Proto-V_2-EOJ before its əj > ə > o merger before labials took place). Although MU attests both V_1 and V_2 contraction at an equal rate, I think the fact that it attests functional (MU *-k-a^{m}ba* '-PST-COND') as well as lexical (MU *ipa* 'home') V_1 contraction is evidence of it belonging to Proto-V_1-EOJ, as V_2 contraction is limited to lexical items 'be longing-' and 'needle'. Therefore, I conclude that MU attests COJ/WOJ influence, as well as V_1 contraction of *ia, and likely V_1 contracted other V_1V_2 vowel sequences diachronically as well. V_2 contraction of *uj/*oj and *uj however, I consider borrowed from V_2-contracting EOJ dialects, TO, SU, and PI. The factors discussed here will be important in determining probable and improbable etymological hypotheses for the MU words that attest high vowels potentially resulting from vowel raising presented in the data sections in 5.2.1 and 5.2.2 below.

6.1.3 Pitati

In PI, there are words that attest diachronic fusion, V_2 contraction, and in one case, V_1 contraction, of Proto-Japanese vowel sequences. The cases involving diachronic fusion I consider evidence of influence from COJ/WOJ except for *əj > e before labials and velars which is not attested in COJ/WOJ in

the mid 8th century. *əj > e fusion is clearly attested in PI nar-ube ‘make a living-DEB’ (cf. WOJ *naru-bəj*). V_2 contraction is attested for *uj,*aj, and *əj, cf. PI tuku ‘moon’ < *tukuj and PI wasura- ‘forget.INF’ < *wasuraj- (cf. WOJ wasure- < *wasurəj- < *wasuraj-), PI ərə- ‘lower-’ < *ərəj- (cf. WOJ əri- < *əri- < *ərəj-), and V_1 contraction once in PI -ar- ‘-PROG-‘ < *-i ar-. For PI, there are numerous cases of likely borrowings from COJ/WOJ and clear support for V_2 contraction of *uj, *aj, and *əj. The single case of V_1 contraction, I consider to be borrowing from a prominent V_1 contraction dialect such as SIP, KAK, KAP, or MU (most likely SIP, PI’s close neighboring province), which all exhibit V_1 contraction in functional morphology. Although PI does attest V_1 contraction in PI *-ar-* ‘-PROG-‘, a functional morpheme, this same morpheme is attested in PI’s neighboring province, SIP, where I suspect it was borrowed into PI from. This alone does not seem like strong enough support, however PI also appears to preserve a V_2 contracted form not attested in any other EOJ dialect, PI *wasura-* ‘forget-‘ < *wasuraj-, whereas the rest of EOJ dialects have /wasure-/, which possibly replaced Proto-V_2-EOJ *wasura in TO and SU, and Proto-V_1-EOJ *wasuri- in SIP, KAK, KAP, MU, and SIK. Because of PI *wasura-*, PI *tuku*, and PI *ərə-*, I consider PI a descendent of Proto-V_2-EOJ. In my analysis of PI data in 5.2.1 and 5.2.2 below, I will take into consideration the factors discussed here.

6.1.4 Simotukeno

In SIK, there are words that attest both diachronic fusion and V_1 contraction of Proto-Japanese vowel sequences. The cases involving diachronic fusion I consider evidence of influence from COJ/WOJ except for *əj > e before labials and velars which is not attested in COJ/WOJ at this time. Clear cases of V_1 contraction are SIK *ipa* ‘home’, and SIK *-ar-* ‘-PROG-‘. SIK *kami* could have come from V_1 contraction of *kamuj or borrowed after undergoing fusion in WOJ yielding SIK [i] for WOJ [ɨ] given that EOJ dialects, given my analysis above, did not have /ɨ/. The one exception to fusion being a purely COJ/WOJ feature, appears to be the case of *əj > e before labials and velars, which is well underway in many EOJ dialects yet lacking in SIN (COJ). Evidence of *əj > e fusion before labials and velars is clear for SIK, attested by noun SIK ame ‘heaven’ < *aməj < *amaj (cf. WOJ amәj), among other examples. Following my earlier analyses of fusion as borrowing (except *əj > e), it can be said that words that attest fusion attests

COJ/WOJ influence, such as the forms found in SIK. Additonally, V_1 contraction of *ia combined with the absence of V_2 contraction supports SIK as a descendent of Proto-V_1-EOJ. In my analysis of SIK data in 5.2.1 and 5.2.2 below, I will take into consideration the factors discussed here.

6.1.5 Sinano

In SIN, only fusion is attested, with the exception of one case of V_2 contraction of Proto-Japanese vowel sequences. SIN forms attest the fusion of Proto-Japanese vowel sequences *uj > o, *ia > e, and *oj > *ɨ > i, (ɨ). This is seen in *kamuj > *kamɨ > SIN kami, *-ki ar-i > SIN -ker-i, and *sugoj- > SIN sugɨ-. Regarding syntactic categories, *uj has fused in the noun *kami* 'deity', and *ia and *oj have fused in the lexical and auxiliary verbs *sugɨ-* 'pass.INF-' and *-ker-i* '-RETR-INF'. There is one case of V_2 contraction found in the verb 'cross', *koja-i > *kojə-i > SIN kojə- 'cross.INF-'. Based on this data, it can be said that SIN has an overall tendency to fuse vowel sequences *uj, *ia, and *oj, with V_2 contraction being limited to *əj. These factors will be important in determining probable and improbable etymological hypotheses for SIN words that attest vowel raising presented in the data sections 5.2.1 and 5.2.2.

6.1.6 Simotupusa

In SIP there are words that attest both diachronic fusion and V_1 contraction of Proto-Japanese vowel sequences. There is only one case where fusion most definitely occurred (most likely in WOJ and later borrowed into SIP), and this is seen in SIP ipe 'house' < *ipia. V_1 contraction definitely occurred in the progressive auxiliary SIP -ar- < *-i ar- and retrospective auxiliary SIP -kar-i '-RETR-FIN' < *-ki ar-i. However the rest of the SIP data suggests less reliable contraction, because the cases that follow could have been from either V_1 contraction or fusion: SIP kami 'deity' < *kamɨ < *kamuj, or SIP kami < COJ/WOJ kamɨ or SIP kami < *kamuj, SIP janagi 'willow tree' < *jana^{ŋ}gɨ < *jana^{ŋ}gəj or SIP janagi (< *jana^{ŋ}gi) < COJ/WOJ jana^{ŋ}gɨ, or SIP janagi < *jana^{ŋ}gəj, SIP kagi 'shadow' < *kage < *ka^{ŋ}gəj < *ka^{ŋ}gaj, or SIP kagi < *ka^{ŋ}gi < *ka^{ŋ}gəj/*ka^{ŋ}gaj, and SIP kopi- 'long for-' < *kopɨ- < *kopoj- or SIP kopi- < WOJ kopɨ- < *kopoj- or SIP kopi- < *kopoj-. As here I follow the approach that all fusion except *əj > e is from COJ/WOJ influence, I cannot accept Kupchik's etymologies involving *uj, *oj, *əj > *ɨ > i in any EOJ

dialect. Therefore only the bolded etymologies (my own) appear possible given my approach to EOJ. It should be noted that SIN (COJ) attests SIN *ᵑgami*, so in the case of 'deity', the SIN form would have been equivalent to the V_1-EOJ form kami < *kamuj. There is one potential case of V_2 contraction in SIP, SIP *siru-pe* 'behind-side'. However, I view this as a compound, and do not consider SIP siru 'behind' < *siruj, as the bound form would not have add the semantically mysterious suffix *-i* (cf. Vovin (2005)'s section on nominals) added to it. As a result of this analysis, according to my view, SIP *siru-* 'behind' does not constitute what would be the only case of V_2 contraction in SIP, although Kupchik views this word as evidence of V_2 contraction. To summarize the above data for SIP, words attesting fusion support COJ/WOJ influence in SIP, although *əj > e before labials and velars appears to be a genuine case of diachronic fusion in SIP. SIP also attests V_1 contraction reliably in *ia, and possibly in *uj, *oj, *əj. Therefore, I consider SIP a descendent of Proto-V_1-EOJ. In my analysis of SIP data in 5.2.1 and 5.2.2 below, I will take into consideration the factors discussed here.

6.1.7 Suruga

Regarding dialect relations, as mentioned above for TO, I consider TO data as evidence of SU developments, provided such data does not appear to be borrowed from COJ/WOJ, e.g. TO *-k-em-u* '-PST-TENT-ATTR'.

As will be mentioned below in the section for TO, in SU, there are words that attest either diachronic fusion or V_2 contraction, as well as words that definitely attest V_2 contraction, of Proto-Japanese vowel sequences. *ia, *əj, and *au are attested reliably to have contracted V_2, with *uj/*oj potentially having contracted V_2. As for the debatable cases *ia and *ua, it is far more likely that contraction took place rather than borrowed COJ/WOJ forms that had undergone fusion, as contraction of V_2 is attested reliably, there is not a single case of definite fusion in SU, and SU is geographically further east of WOJ than the heavily influenced TO was. Granted, it is possible however that these are just raised cases of borrowed COJ/WOJ forms, as COJ/WOJ influence appears to have permeated every EOJ province. Despite this, since SU lacks any convincing cases of fusion, I view V_2 contraction as more likely for ambiguous cases in SU. The cases of V_2 deletion, I view as Proto-TS developments, later lost in

TO, but preserved in SU. Cases where *ia and *ua may have fused and raised (COJ/WOJ borrowings), would have undergone the following development, *ia > *e > i, *ua > *o > u, with what I view as the more likely contraction hypothesis yielding i < *ia, and u < *ua. The words that attest these developments are the verb SU kapir- 'return' < *kapi ar- or SU kapir- < *kaper- < *kapi ar- (cf. WOJ *kaper-*), the verb SU kajup-am-u 'go back and forth-TENT-ATTR' < *kaju-ap-am-u or SU kajup-am-u < *kajop-am-u < *kaju-ap-am-u (cf. WOJ *kajop-am-u*), the noun SU ipi 'home' < *ipia or SU ipi < *ipe < *ipia (cf. WOJ *ipe*), and the noun SU mi 'wife' < *mia/*miə (cf. WOJ *me*). Reliable cases of V_2 contraction where a fusion analysis is not supported are the progressive auxiliary SU -ir- < *-i ar- for *ia, the verb SU əmop-o 'think-EV' < *əməp-ə < *əməp-əj, for *əj (cf. WOJ *əmop-əj*), and the noun SU kama 'duck' < *kamau, (cf. WOJ *kamo*) for *au. There is one semi-reliable case of the verb SU kupusi- 'be longing-' <*kopoj-si-/*kopo-si- (cf. WOJ kopɨsi-, koposi-: Vovin 2011: 223). If the proto-form of this is *kopoj-si, V_2 contraction is ensured, however if the adjectival final -si attached directly to *kopo-, then this could simply be vowel raising. Based on these data, it can be said that Proto-TS had an overall tendency to contract the second vowel in the vowel sequences *uj/*oj, *ia, *ua, *əj, and *au (and possibly *uə based on TO data). This will be an important factor in determining probable and improbable etymological hypotheses for the SU words that attest high vowels potentially resulting from vowel raising presented in data sections 5.2.1 and 5.2.2 below, given that both TO and SU likely derive from the same mother language, Proto-TS.

Because SU already attests all cases of V_2 contractions attested in TO, nothing needs to be said about what TO contributes in regards to new knowledge about vowel development in Proto-TS.

6.1.8 Töpotuapumi

Regarding dialect relations, I follow Kupchik in analyzing TO and SU as developing from a similar mother language, what Kupchik calls [Proto-]TS (Töpo-Suruga), however I believe that data presented in his TO and SU sections evidences an analysis of TO and SU as being separate dialects (mainly due to what I view as COJ/WOJ influence), contrary to Kupchik's analysis of TO and SU representing a single dialect, TS, contemporaneous to the mid 8th century. However, as I view them originating from the same mother language (Proto-TS), I do consider SU data as evidence of TO developments, and likewise for SU,

I consider TO data as evidence of SU developments, provided such data does not appear to be borrowed from COJ/WOJ, e.g. TO *-k-em-u* '-PST-TENT-ATTR'.

In TO, there are words that attest diachronic fusion and both V_1 and V_2 contraction of Proto-Japanese vowel sequences. I consider the cases of fusion evidence of COJ/WOJ influence on TO. Along with TO's attestations of V_1 and V_2 contraction, because TO is most likely related to SU, I also consider SU data after TO data in this section. V_2 contraction of *əj > ə is attested in TO, as seen by *ka$^{\eta}$gəj > TO ka$^{\eta}$gə 'shadow' and *sasakəj > TO sasakə- 'raise.INF-'. There may be two other cases of V_2 contraction in TO, but they are controversial. TO kajup-am-u < *kaju-ap-am-u, may attested V_2 contraction of *ua for example, although this easily could simply just be a later raised borrowing of WOJ kajop-am-u < *kaju-ap-am-u, with a similar case in a noun as well, cf. TO *imu* 'beloved girl', which may be from ***imuə**, evidencing V_2 contraction of *uə, however it is more likely from WOJ *imo* followed by raising, given the high volume of WOJ borrowed forms in TO. Regarding V_1 contraction, TO *təpotapomi*, *təpotuapumi* 'placename' < *təpo tu apa omi < *təpə tu apa omi (Kupchik's updated etymology of Ōno et al 1990: 948's), attest *ua and *ao > TO a, o, with subsequent vowel raising in *omi > umi 'sea'. Additionally, TO *siru-* 'white' in the place name TO *sirupa* may appear at first to be a clear case of V_1 contraction based on *sirau (cf. WOJ *sira-*), with TO *-pa* 'feather', as Kupchik analyzes it. These cases of V_1 in what should be a V_2 contraction prominent dialect, given that SU primarily attests V_2 deletion and TO and SU are likely related may appear problematic at first. However, often times place names are borrowed and etymologically are explained best when looking at the donor language/dialects' diachronic developments rather than the host dialect of the form. For TO sirupa, Vovin (2013: 66) suggests TO *sirupa* is a loan from PA *sirpa* 'cape, promontory' from Ainu *sirpa*. Therefore, I believe the argument for the development of TO *təpotuapumi*, *təpotapomi* as a borrowings from a V_1 contracting dialect is also possible. One other case of V_1 contraction in the related SU dialect is found in SU *kama* 'duck', which may also attest V_1 contraction if the proto-form is *kamua, however it is most likely *kamau, as supported by a striking tendency for SU to delete V_2, yielding SU *kama* 'duck', otherwise we would most likely see SU *kamu* < *kamua, which is not attested. Although, the fact that we see V_1 deletion in the TO place name makes V_1 deletion in 'duck' seem remotely possible, I do not follow this view and consider SU kama < *kamau, and the TO place

names as originating from external sources (Proto-Ainu for TO *sirupa* and a V_1 contracting dialect for TO *təpotuapumi, təpotapomi*. Aside from these minor cases of V_1 contraction, the more important feature of TO is that TO has been heavily influenced by COJ/WOJ influence, and only reliably attests two remaining cases of V_2 contraction of *əj from Proto-TS, with two less reliable cases of V_2 contraction from earlier *uə and *ua being possible, but more likely raised borrowings from COJ/WOJ. This data alone does not reveal much about Proto-TS, however, as mentioned above, I believe that TO data should be reinforced by SU data in reconstructing earlier developments (Proto-TS developments), therefore I also consider that Proto-TS had an overall tendency to contract the second vowel in the vowel sequences *uj/*oj, *ia, *ua, *əj, and *au as well, based on the SU data above. This information will be important in determining probable and improbable etymological hypotheses for the TO words that attest high vowels potentially resulting from vowel raising presented in data sections 5.2.1 and 5.2.2 below, given that both TO and SU likely derive from the same mother language, Proto-TS.

6.2 Mid vowel raising

6.2.1 *e > i

	*Ce > Ci syllables	Ce syllables
KAK	0	71
KAP	0	51
MI	0	7
MU	1	47
PI	1	57
SA	0	31
SIK	0	36
SIN	0	11
SIP	2	30
SU	0~1	56

TO	0	16
UD	2	?
Total	6~7 *Ce > [Ci]	413 [Ce] unraised

There are only 6~7 cases of *Ce > Ci in Kupchik's EOJ corpus out of 413 Ce syllables that could have undergone vowel raising. In quite a few cases accurate etymologies cannot be ascertained. There is only one unclear case that may or may not have undergone vowel raising. Below, I examine each case in each province individually and analyze each possible etymological hypothesis followed by a conclusion as to which one/ones appear to be true. Proto-Ryukyuan and modern Ryukyuan data is consulted where I have been able to find Ryukyuan reflexes in existing literature (Hirayama 1986, 1988, Thorpe 1983, Hirayama 1992-1993, and Vovin 2010). I use Thorpe (1983)'s PR reconstructions when available as they are based on 40 Modern Ryukyuan dialects. Where Thorpe (1983) does not reconstruct a given word, , I use Hirayama (1986, 1988) data to reconstruct my own Pre-RY form, and when data cannot be found there, I use Hirayama (1992-1993), Vovin (2009, 2010), Nakamatsu (1987), and Sakihara (2006).

Attestations from Muzasi province poetry (MU)

'NEG.POT'

1) PJn *-kane- > MU -kani-

The WOJ reflex of this form is *-kane-*. The negative potential is not attested in Ryukyuan (Vovin 2009: 999), so I cannot reconstruct a Pre-RY form.

Kupchik argues that raising occurred in *-kane- > -kani-. Vovin (2009:998) also reconstructs PJn *-kane-. Without a convincing alternative etymology involving vowel sequences *ia or *iə like we have for -kem- '-PST.TENT-' from *-ki -am- '-PST -TENT-', we are left with retention. Therefore, I count the Muzasi form as a case of vowel raising in MU.

Attestations from Pitati province poetry (PI)

'stay-INF'

1) PJn *təmar-i > (*temar-i) > PI timar-i

The WOJ reflex of this form is *təmar-i*. Thorpe (1983) does not reconstruct this word for PR, but it is attested in Modern Ryukyuan. For 'stay-INF', I reconstruct PR *tomar-i, *tomar-ɨ, and Pre-RY *tumar-i, *tumar-ɨ (for the verb root, cf. IS tumar-uda, HA tumar-jan/-jatan, YO tuma-ɴ/-taɴ, WA tuma-taɴ, CH tuma-taɴ, TOK tuma-tɪ 'id.' (my morpheme boundaries for data from Hirayama 1988: 465-466, 1986: 513-514), and for the infinitive, based on the forms of the past tense suffix and final predicate suffixes (not listed here), we can tell for most dialects what the form of the infinitive was for 'stay-', cf. IS -ɨ- HA -i- YO -i- WA -i- CH -i- TOK -i- (Hirayama 1986: 839, 872, 911, Hirayama 1988: 728, 766, 798). The infinitives for the Northern Ryukyuan data (WA, CH, and TOK) are not as clear, as in these dialects Hirayama's type I and type II verbs have identical past tense suffixes, whereas for Southern Ryukyuan data (IS, HA, YO), the form of the past tense suffix makes clear whether a given verb is type I or type II, which determines what the realization of the infinitive for that particular verb is, so for the Southern Ryukyuan data, the infinitive forms are definitely accurate, but in all likelihood, the Northern Ryukyuan infinitive for 'stay' was likely type I as well and therefore most likely accurate as well. The PR form, earlier than the Pre-RY form, is based on the fact that WOJ ə : PJ ə, and PJ ə : PR o, therefore the Pre-RY u : WOJ ə is most likely the result of PR *o > Pre-RY *u. As neither PR nor Pre-RY forms match the EOJ form, I do not count this as a case of potential borrowing from Pre-RY into EOJ.

Regarding the raising in PI *timar-i*, Kupchik argues that WOJ *təmar-i* is a retention and that *tə > [te >] ti in Pitati. Kupchik also mentions that this development is found in the Middle Japanese word tigaf- 'differ' < [ti^{ŋ}gap- < tə^{ŋ}gap- <] WOJ ta^{ŋ}gap-. I follow Kupchik's analysis and additionally count this as a convincing case of vowel raising in Pitati, as the correspondence WOJ ə : PI i is hard to explain otherwise.

Attestations from Simotupusa province poetry (SIP)

'side, shore'

1) PJn *pia > *pe > SIP SIP

2) PJn *piə > *pe > SIP SIP

3) PJn *pe > SIP SIP

The WOJ reflex of this form is *pe*. Thorpe (1983: 328) reconstructs PR *soba ‘side’. However this word is likely not cognate with SIP *pi*. As I could not find a cognate for SIP *pi* in any of my Ryukyuan data sources, I cannot reconstruct a Pre-RY form.

As for the EOJ form, Kupchik (2011:391) does not comment on this spelling variation (most likely by accident). ‘shore’ is also attested as *pe* in the Suruga dialect. The proto-form may be either *pia, *piə, or *pe (cf. PJn *ipia > SIP ipe). Because SIP attests fused forms as a result of COJ/WOJ influence and PJn *pe cannot be ruled out either, I cannot rule out any of the above three hypotheses. Because all the above hypotheses involve vowel raising however, I do consider this a case of vowel raising in SIP.

‘shadow’

1) PJ *KaNVkaj > PJn *ka^{ŋ}gəj > *ka^{ŋ}ge > *kage > SIP kagi

2) PJ *KaNVkaj > PJn *ka^{ŋ}gəj > *kagəj > *kage > SIP kagi

The WOJ reflex of this form is *ka^{ŋ}gəj*. Thorpe (1983: 326) reconstructs PR ‘shade, reflection’ as *ka[^{ŋ}]ge’, *ka[^{ŋ}]ga’-. Although both Northern and Southern Ryukyuan languages attest high vowels in the second syllable, cf. Tamina, Oku, Hentona, and Ieshima Northern Ryukyuan *hagi* ‘id.’, and Ikema, Ōgami, Sarahama, Yonaha, Uechi, and Nakasuji Southern Ryukyuan *kagi* ‘id.’, Southern Ryukyuan Yamatoma attests *xage* (Thorpe 1983: 326). Because Southern Ryukyuan attests a mid vowel, only Pre-RY *kage explains the distribution of Modern Ryukyuan forms. As this does not match the SIP form, I consider SIP *kagi* a case of innovative vowel raising and denasalization.

Kupchik does not comment on this spelling variation, most likely by accident. I cannot rule out either hypothesis, however because both require vowel raising, I consider this a case of vowel raising in SIP.

Attestations from Suruga province poetry (SU)

‘home’

1) PJn *ipia > *ipe > SU ipi

2) PJn *ipia > SU ipi

The WOJ reflex of this form is *ipe*. Thorpe (1983) does not reconstruct this word for PR, and it does not appear to be attested in most of Modern Ryukyuan. IS, WA, CH, and TOK all attest *ja:* 'home', with YO attesting *da:, -ja* (Hirayama 1988: 98, Hirayama 1986: 61). HA may have preserved this form in HA *çi:* 'home'. Although in YO we see the compound ʔana-çira-da 'dugout home (lit. hole-ʔdig-home)', which Hirayama defines as 穴掘り家 MdnJpn *anahorija*(?) *anahoriie*(?) 'dugout home (my translation)'. The HA form does not appear to be from the HA verb 'dig', cf. HA *ʔana puruɴ* 'dig a hole/holes', or the YO verb 'dig', cf. YO *ʔanampu fui* 'dig a hole/holes' (both cases from Hirayama 1988: 589). Therefore, it might be possible to reconstruct from HA *çi* an earlier Pre-RY *(i)pi form, factoring in lenition of the initial vowel, although this is quite speculative without further evidence. As such, I tentatively do not count SU *ipi* as a possible loan from Pre-RY.

Regarding the proto-form of SU *ipi*, Kupchik mentions both 1) and 2), and views the latter as more likely. As SU attests a strong presence of V_2 contraction and little COJ/WOJ influence, I follow Kupchik and view 2) as most likely. Therefore, I do not consider this word to be a case of vowel raising.

'return-INF'

1) PJn *kap-i ar-i > SU kapir-i

2) PJn *kap-i ar-i > *kaper-i > SU kapir-i

The WOJ reflex of this form is *kaper-i*. Thorpe (1983) does not reconstruct this word for PR. It is attested in Ryukyuan, but only in Ishigaki Southern Ryukyuan is a cognate attested according to available data from Hirayama (1988, 1986). Northern Ryukyuan has replaced the reflex of SU *kapir-i* with a separate verb for 'return', WOJ *mo^{n}dor-* 'return' (from Ōno et al 1990: 1319, my morphemic analysis and translation) cf. WA *mudur-aɴ*, CI *mudur-aɴ*, TOK *mudur-aɪ* (Hirayama 1986: 165). Based on IS data, I reconstruct Pre-IS *kaer- (cf. IS *kair-anu* 'return-NEG', IS *kaer-itta* 'return-PST', IS *kaer-ɨfusaɴ* 'return-want', and IS *kair-uɴ* 'return-NPST': Hirayama 1988: 182). There are three problems with this etymology. First, it is only attested in one of the Ryukyuan varieties looked at here, second, the second vowel here is not raised in its reconstruction, and third, the -p- in the SU and WOJ reflex is unaccounted for. Without further comparative evidence and knowledge about the lenition of -p- in Ryukyuan, I cannot count this as a form as a potential borrowed form.

Regarding the development of *kapir-i* from PJn, Kupchik views SU *kapir-i* like SU *ipi* above, and proposes an etymology that derives i < *i-a, where the infinitive *-i* and the liquid consonant from the existential verb *ar-* are retained while the initial vowel of the existential verb is deleted. As discussed in the section on SU, SU attests a strong presence of V_2 contracted forms and weak COJ/WOJ influence. Therefore I consider 1) most likely, following Kupchik, and therefore do not count this as a case of vowel raising.

'wife'

1) PJn *mi(n)a > SU mi

2) PJn *mi(n)ə > SU mi

3) PJn *mi(n)a > *me > SU mi (Martin 1987)

4) PJn *mi(n)ə > *me > SU mi

5) PJn *me > SU mi

The WOJ reflex of this form is *me*. Thorpe (1983:349)'s reconstruction of PR 'wife' **tozi* is not helpful here as it is most likely not cognate with WOJ *me*. PR 'woman' *wona(go) (Thorpe 1983: 350) unfortunately is missing the most vital syllable for this comparison if it is cognate (partially) with WOJ *omina* (Martin 1987: 62 applying Miyake (2003)'s phonetic reconstruction of WOJ). Therefore I cannot reconstruct an equivalent Pre-RY form and accept SU *mi* as an innovative development.

Regarding the etymology of SU *mi* and WOJ *me*, Kupchik views this as a caes of *me > mi. Contrary to this, Martin (1987:62) tries to reconstruct it from *mina, citing support from WOJ *omina/əmina* 'woman', and also Hachijou dialect *menarabe* 'girl' ?< *mina-[wa]rabe, but Martin mentions that *menarabe* may instead be from *me-[no w]arabe 'female-GEN child', cf. Shuri *mijarabi* < *me-warabe. If the proto-form of SU *mi* is *mi(n)a, then it is likely a contraction of *ina > i or fusion and subsequent raising *ina > *e > i occurred. Because Suruga data that attests a strong presence of V_2 contracted forms, I consider 1), 2), or 5) most likely. Because I cannot rule out any of these three however, I count this as a 0~1 case of vowel raising.

'make-PROG-'

1) PJn *tukur-i-ar > SU tukur-ir-

2) PJn *tukur-i-ar > *tukur-er- > SU tukur-ir-

The WOJ reflex of this form is *tukur-er-u*. Vovin (2009: 892) mentions that Old Ryukyuan *-r-* may be cognate with WOJ *-er-* 'PROG', but because no modern dialects attest a similar form, he posits that the case in Old Ryukyuan is a loan from Middle Japanese. Following this analysis, I cannot reconstruct a Pre-RY progressive auxiliary *-*ir-* and therefore, I consider SU *-ir-* a case of contraction.

Although this word is spelled as ^{n}dukur-ir-, since I counted the prenasalized onset phonogram as a misspelling above, I treat it as [tukur-ir-] here. Kupchik views this as 1), a case of V_2 contraction. Although 2) is theoretically possible, because COJ/WOJ influence in SU is weak and V_2 contracted forms are strongly attested, I follow Kupchik and view this as a case of V_2 contraction. Therefore I do not count it as a case of vowel raising in SU.

'part from.INF-stone'

1) PJn *panare-iso > SU panar-iso 'part.from.INF-stone'

The WOJ reflex of this form is *panare-so*. I could not find this word in my Ryukyuan data sources and therefore consider this a case of SU innovation.

Kupchik considers this a case of synchronic V_1 contraction. As for the meaning of this word, Vovin (2013: 84) translates it as 'rocks in the sea not connected to the shore'. As no other cases of V_1 contraction are attested in SU which primarily attests V_2 contracted forms, I follow Kupchik consider this compound a case of synchronic V_1 contraction.

Attestations from poems of unknown dialect and province (UD)

'-PERF-IMP'

1) PJn *-n-e > UD -n-i

The WOJ reflex of this form is *-n-e*. The Old Ryukyuan imperative marker is also *-e*, e.g. *kir-as-e* 'cut-HON-IMP', and modern Ryukyuan dialects also exhibit similar shapes of this imperative suffix, cf. Naha *i-i* 'say-IMP', Shuri *kam-ee* 'eat-IMP', Miyako *num-e* 'drink-IMP' (Ryukyuan data from Vovin 2009: 654-655). As Shuri (Northern Ryukyuan) and Miyako (Southern Ryukyuan) both attest a mid vowel, it is only logical to reconstruct Pre-RY *-e, which is not a match to UD *-i*. Furthermore, the perfective auxiliary

-n- is not attested in any Ryukyuan dialect (Vovin 2009: 949). Therefore I cannot reconstruct a Pre-RY form for these morphemes.

For this case of an UD's vowel raising, Kupchik analyzes it as *-e > -i. I agree as I am not aware of an etymology involving a vowel sequence for this morpheme. Therefore, I count this as a case of vowel raising, although unfortunately which province in which this occurred is not identifiable at present.

'do-'

1) PJn *se- > UD si-

The WOJ reflex of this form is *se-*. Thorpe (1983) does not reconstruct this word for PR, but it is attested in Hirayama (1988: 728, 766, 798, 1986: 839, 872, 911). For 'do-', I reconstruct Pre-RY *si-. I base Pre-RY *si- 'do' on Southern Ryukyuan, IS and HA *s-* 'do-' (cf. IS, HA *s-un*, 'do-NEG'), YO attests *k*$^{?}$- 'id.' (cf. YO *k-un* 'do-NEG') and Northern Ryukyuan, WA, CH, and TOK *si-* 'do-' (cf. WA, CH, TOK *si-i*, 'do-INF', which is realized as a long *i:*). As the Pre-RY reconstruction is a match to the UD form, I consider it a potential case where the Pre-RY form may have been borrowed into this unknown dialect.

Kupchik views this as a case of *se- > si-. I agree with his analysis and count this as a case of vowel raising. Whether it is Ryukyuan *se- > si- that is later borrowed or internal *se- > si- however, I cannot say.

'AVATTR-'

1) PJn *ke- > UD ki-

The WOJ reflex of this form is ki-. This form is not attested in Ryukyuan (Vovin 2009: 469). Vovin states that there are two possibilities for ki-. The first is that it is an archaism lost in Ryukyuan but preserved in Japanese. The second is that ki- developed independently in Japanese. Vovin claims that because WOJ preserves cases of uninflected adjectival stems that could modify nominals or noun phrases, WOJ had an earlier system where attributive forms were unnecessary. I am not sure of this, but because there are no cognates of *ki-* in Ryukyuan, the vowel raising of *ke > UD ki 'AVATTR-' as a result of contact with an early Ryukyuan dialect with regularly raised vowels is not supported for this form.

Kupchik analyzes this variation as *ke- > ki-. I agree with his analysis and count this as a convincing case of vowel raising, as no clear alternative etymologies seem possible.

6.2.2 *o > u

	*Co > Cu syllables	Co syllables
KAK	0	94
KAP	1	51
MI	0	6
MU	1~2	39
PI	0~6	47~48
SA	0	37
SIK	0	41
SIN	1~3	18
SIP	1~3	46
SU	2	19
TO	1~3	28
UD	0	?
Total	7~20 *Co > [Cu]	426~427 [Co] unraised

There are only 7~20 cases of *Co > Cu in Kupchik's EOJ corpus out of 426~427 [Co] syllables that could have undergone vowel raising. In quite a few cases accurate etymologies cannot be ascertained. There are 13 cases where a given word may have undergone vowel raising or contraction, and for these I count them as 0~1 cases of vowel raising. Below, I examine each case in each province individually and analyze each possible etymological hypothesis followed by a conclusion as to which one/ones appear to be true. Proto-Ryukyuan and modern Ryukyuan data is consulted where I have been able to find Ryukyuan reflexes in existing literature (Hirayama 1986, 1988, Thorpe 1983, Hirayama 1992-1993, and Vovin 2010). I use Thorpe (1983)'s PR reconstructions when available as they are based on 40 Modern Ryukyuan dialects. Where Thorpe (1983) does not reconstruct a given word, I use Hirayama

(1986, 1988) data to reconstruct my own Pre-RY form, and when data cannot be found there, I use Hirayama (1992-1993), Vovin (2009, 2010), Nakamatsu (1987), and Sakihara (2006).

Attestations from Kamitupusa province poetry (KAP)

'long for-'

1) PJn *kopoj > *kopuj > KAP kopu-

2) PJn *kopoj > *kopo > KAP kopu-

The WOJ reflex of this form is *kopɨ*. I could not find any documentation of this verb in my main Ryukyuan sources, however I did find a noun likely cognate with it, Okinawan kui 'love, tender passion (poetic)' < ?*kupi < ?*kopoj- (the Okinawan data is from Sakihara 2006: 96). As we do not see kuu < *kupu, and it is not attested in other Ryukyuan sources used here, I cannot attribute the KAP form to early Ryukyuan without further evidence.

Regarding the raising of *u in KAP, Kupchik argues that it is V_2 deletion of PJ/PJn *uj. I agree with his analysis of V_2 deletion, although there appear to be two ways in which this could have happened. As raising of *o > u is highly irregular in KAP, it may simply be archaic with few traces remaining, rather than sporadic in the 8th century. This would be the case if the vowel sequence *oj raised to *uj before contracting. An alternative hypothesis of contraction first and raising later seems equally as possible however. Additionally, *kopəj / *kopuj are not possible proto-forms here because they cannot explain WOJ *koposi-* (Vovin 2011: 223). In conclusion, without being able to convincingly demonstrate one is more likely than the other, I leave this analysis open for further research and consider either possible. Because both cases involve vowel raising *o > u, I consider this a convincing case of vowel raising in KAP.

Attestations from Muzasi province poetry (MU)

'long for-'

1) PJn *kopoj-si- > *kopuj-si- > MU kopusi-

2) PJn *kopoj-si- > *kopo-si- > MU kopusi-

The WOJ reflex of this form is *kopɨsi-*. The *-si* in the proto-form here is a predicating suffix which is also used occasionally as an attributive suffix (Vovin 2009: 461) and made adjectives out of verbs before it became internalized into their underlying form. As *kopojsi- is cognate with its verbal equivalent *kopu-*, and the Ryukyuan data for this cognate has already been analyzed, I will not repeat that explanation here. I reject this word as a loan into MU from Pre-RY.

Kupchik analyzes this as PJn *kopoj-si > *kopuj-si > MU kopusi-. The same dilemma presents itself here as in the form above. I therefore come to the same conclusion and leave both of the two hypotheses open to further research. I count this form as a case of vowel raising of *o > u.

'fire'

1) PJn *pəj > ***poj > *puj > MU -pu**

2) PJn *pəj > ***pə > *po > MU -pu**

2) PJn *poj > *puj > MU -pu

3) PJn *poj > *po > MU -pu

5) (PJn *asi-) PA *apuj > *(asi-)puj > MU (asi-)pu

This word is attested as part of a compound noun, MU *asi-pu* 'reed-fire'. The non-compound WOJ reflex of 'fire' is pɨ and the compound WOJ reflex of 'fire' is *po-*, which tells us that the proto-form must have been *pəj or *poj, as WOJ ɨ is well known to have come from *uj, *oj, and *əj. *puj could also be possible but would require lowering of *u > o to explain WOJ po- which is less common than vowel raising. Thorpe (1983: 286) reconstructs PR *pi 'fire'. This is quite valuable because based on Pellard (2008: 136), PR *i correspondences to PJ *i, *ui. If both Pellard (2008) and Thorpe (1983: 286) are correct, the PJ proto-form must be either *pi or *puj. As for the PR form to be borrowable to explain MU -pu, PR *pi would have to have fronted to *pu, or alternatively have lost the glide of *puj by the 8th century, yet no data from Thorpe's modern dialect data support PR *pi > *pu. Therefore this word cannot be counted as evidence in support of a contact hypothesis between Ryukyuan speakers and EOJ speakers.

Regarding MU-internal hypotheses for MU *-pu*, Kupchik proposes that either MU *-pu* is from *pəj, or from (Proto-)Ainu *apuj. WOJ attests *-po*, *pɨ*. Because MU attests both V_1 and V_2 contraction and the

PA hypothesis of Kupchik cannot be rejected either, I leave this etymology open to further research and count it as a 0~1 case of vowel raising.

Attestations from Pitati province poetry (PI)

‘beloved one’

1) PJn *imuə > *imo > PI imu

2) PJn *imuə > PI imu

3) PJn *imə > *imo > PI imu

4) PJn *imo > PI imu

The WOJ reflex of this form is *imo*. Unfortunately I could not find this word in any of my Ryukyuan data sources.

Kupchik argues that *imo > imu while mentioning that *imua is also a possibility. Because Pitati has evidence of *o > u, and because *imo* is found in PI as well, he rejects a *ua/***uə** > u hypothesis. However, the presence of PI *imo* is not proof of PJn *imo. In fact, the existence of *imo* is inevitable if PJn *imuə > *imə. Because *ə > o /$C_{[+labial]}$_ very early, *imo* would be the resulting form, which we see. We also see it spelled ‘imö’ [imə] in KAK and SIP, possibly reflecting an older pronunciation, *imə > imə, where *imə may have come from *imuə, and unlikely from *imuə < *imua. Because it is well accepted that all *mə merged with mo before the Man’yōshū (mid 8th century), which would yield *imo*, **PJn *imuə** seems to be very much a possibility, although *imua is far less likely, requiring centralization of *imua > *imuə before contraction began, which would yield *imə and finally MU imo. If PJn *imua was possible, we would likely see *ima* in KAK but instead we see *imo* in KAK. Therefore I reject PJn *imua > *ima > *imə, but accept the other possible etymologies proposed here, because none of them appear to be disprovable. I count this word as a 0~1 case of vowel raising.

‘border guard’

1) PJn *sakimuari > *sakimori > PI sakimuri

2) PJn *sakimuəri > *sakimori > PI sakimuri

3) PJn *sakimuari > PI sakimuri

4) PJn *sakimuəri > PI sakimuri

5) PJn *sakiməri > *sakimori > PI sakimuri

6) PJn *sakimauri > PI sakimuri

7) PJn *sakimori > PI sakimuri

The WOJ reflex of this form is *sakimori* (transliterated sakyimöri). I could not find this word in Ryukyuan which is not surprising as this is a very old position from Ancient Japan.

Kupchik argues that this word comes from *sakimori without suggesting secondary *o < *ua/*uə. Because WOJ spells this as sakyimöri, it may be etymologically [sakiməri], however by the 8th century it was most likely that [sakimori] as *ə > o /$C_{[+labial]}$_ was quite well-spread in WOJ and EOJ. In 8th century WOJ, transliterated mö is actually [mo], homophonous with transliterated mwo [mo]. Therefore, the use of a mö phonogram may just be coincidence rather than preserved orthography. If this is the case, *sakimuari and *sakimuəri are alternative analyses to *sakimori. If *sakiməri* is attested in early WOJ that preserves etymological *mə, then *sakimuari > PI sakimuri and *sakimuəri > PI sakimuri will be ruled out. However, at present, I cannot confidently follow Kupchik's argument for *sakimori alone. Unfortunately, this word is only attested once in the entire EOJ corpus, therefore we do not know if EOJ dialects that attest V_1 contraction had *sakimari* or sakimori < *sakimuari/*sakimuəri. In conclusion, because the alternative hypotheses proposed here cannot be ruled out, I count this word as a 0~1 case of vowel raising.

'long for-DES-IMP'

1) PJn *sinu-ap-an-e > *sinop-an-e > PI sinup-an-e

2) PJn *sinu-ap-an-e > PI sinup-an-e

3) PJn *sino-ap-an-e > *sinop-an-e > PI sinup-an-e

4) PJn *sinop-an-e > PI sinup-an-e

The WOJ reflex of this form is *sinop-an-e*. I could not find this word in any of my Ryukyuan sources.

Kupchik argues that it is difficult to accept a contraction hypothesis because to do so would be to speculate and considers the vowel raising hypothesis of 4) most likely. Although it is speculative, I think it

is also speculative to claim *sinop- > sinup-, as we do not have any clear evidence that the WOJ form sinop- is a case of retention rather than a case of a secondary case [o] from vowel sequence fusion. Kupchik views the development of this form as most likely being PJn *sinop- > PI sinup- although he mentions that the proto-form may have been *sinu-ap- or *sino-ap- as well. His reasoning for splitting the verb root into two parts *sino- and *-ap- is because he views “trisyllabic roots in Japanese should be morphologically complex at least diachronically, and the /p/ element in this root may be a contacted form of the iterative *-ap-” (Kupchik 2011: 365-366). However, if the PJn form is *sino-ap-, the WOJ development is problematic as no diachronic developments for *oa sequences have been discussed in the literature on Proto-Japonic vowels. Because WOJ fuses all vowel sequences unlike EOJ dialects, *oa, if a correct part of the proto-form, seems likely to have yielded a single vowel combining both V_1V_2 properties, or a compromise in between both, however because [o] and [a] are so close that there was no existing vowel phoneme in between both. Because of this, I think [o] is the likeliest result if we assume *sino-ap-. Interestingly, this development turns out to be V_2 deletion in WOJ which has always fused vowel sequences, but this may just be coincidence due to the lack of any intermediate low-mid or central-back vowels. PJn *sino-ap-an-e > WOJ sinop-an-e explains the WOJ form, although it forces us to accept V_2 deletion in WOJ due to the impossibility of fusion, although if that was the proto-form, WOJ must have resolved the WOJ phonotactically problematic CV_1V_2 sequence. If *sino-ap- > WOJ sinəp-, we would expect WOJ *sinəp-* as OJ ə > o before coronals happened later. However, we see *sinop-* and rarely *sinup-* in WOJ. Alternatively, if the proto-form was *sinu-ap-, we can reconstruct *sinu-ap > WOJ sinop- following fusion in WOJ, with the PI form borrowing the WOJ form and raising it. As I cannot rule out any of these etymologies however, I consider this form a 0~1 case of vowel raising in PI.

‘night’

1) PJn *jua > *jo > PI ju

2) PJn *juə > *jo > PI ju

3) PJn *jua > PI ju

4) PJn *juə > PI ju

5) PJn *jau > PI ju

6) PJn *jo > PI ju

The WOJ reflex of this form is *jo*. PR has two forms for ‘night’, *ju:ru and *ju: (Thorpe 1983: 312). Unfortunately, Thorpe (1983: 312) only lists the disyllabic form and not the monosyllabic one. However, based on the fact that out of the 36 Ryukyuan languages that attest the disyllabic form of ‘night’ in Thorpe (1983: 312) every one of them has [u] in the first syllable, it is very likely that the monosyallbic PR *ju: also follows this pattern. To reinforce this reconstruction for the monosyllabic ‘night’, IS and HA attest *ju*- ‘night’ in the compound junaka (IS), and junaga (HA), meaning ‘middle of the night’ (data from Hirayama 1988: 670). YO attests a similar form that simply underwent fortition, YO *du*- (cf. YO *dunaga*, with this data coming from Hirayama 1988: 670). Therefore, I believe Pre-RY *ju(:) is reliably reconstructable. As this form and the PI form match, I consider the PI form potentially borrowed by a Pre-RY dialect.

Kupchik decides to choose vowel raising, 5), over contraction, 3) or 4) for ‘night’ because *jo* is also attested in Pitati. This case is similar to WOJ and PI *imo* ‘beloved one’ above, where both PI *imo* and PI *imu* are found. However, in this case the vowel in question follows a palatal onset rather than a labial one. The fact that imo has a labial onset in its second syllable allowed the hypothetical proto-form *imuə to appear as *imo* in later dialects despite potentially originating from *imuə. However, PI *ju* would not have labialized *ə > o before [j] onsets, cf. PI *jəsəp-i* ‘prepare-INF’. *jə > *jo > ju is not a possible etymology. However, we do see ‘night’ attested in SIP as *jo*, which also attests V_2 deletion (siru < *siruj). *joj is not possible either as it would have developed into WOJ *jɨ which is not phonotactically possible. V_2 deletion of *jua > ju, as well as *juə > ju are possible however. V_1 contraction of *jau is also possible, as even though I consider PI deriving from Proto-V_2-EOJ, PI evidences borrowing of V_2 contracted forms. Without being able to disprove any of the above hypotheses, I therefore consider this a 0~1 case of vowel raising in PI.

‘shaking’

1) PJn *tajuara > *tajora > PI tajura

2) PJn *tajuəra > *tajora > PI tajura

3) PJn *tajuara > PI tajura

4) PJn *tajuəra > PI tajura

5) PJn *tajora > PI tajura

The WOJ reflex of this form is unknown. In Sagamu poetry it is attested as *tajora*. I could not find a similar form in Ryukyuan.

Kupchik argues that because SA attests *tajora*, it seems to be a clear case of vowel raising. However I disagree. As the etymology of this form, I believe, could have been any of the above 5 hypotheses, I count this word as a 0~1 case of vowel raising in PI.

'cross.INF'

1) PJn *kuaja-i- > *koja-i- > *kojə-i- > *koje-/*kujə-i- > PI kuje-

2) PJn *kuəja-i- > *koja-i- > *kojə-i- > *koje-/*kujə-i- > PI kuje-

3) PJn *kuaja-i- > *kuja-i- > *kujə-i- > PI kuje-

4) PJn *kuəja-i- > *kuja-i- > *kujə-i- > PI kuje-

5) PJn *koja-i- > *kojə-i- > *koje- > PI kuje-

The WOJ reflex of this form is *koje*-. It is also found as *koje*- in KAK and as *kojə*- in SIN. Unfortunately, I could not find this word in my Ryukyuan data sources.

The development of *a-i- here is based on Kupchik's proposed stages of vowel development (Kupchik 2011: 39-40), although here the focus is on the first syllable of the word. Kupchik follows *koje- > kuje-, while mentioning that the contraction of *ua is another explanation. He argues that *o is less controversial than *ua. However, I disagree, as I have mentioned in cases above regarding the possibility of vowel sequences in proto-forms. As I cannot rule out any of the hypotheses mentioned here, I consider this form a 0~1 case of vowel raising in PI.

Attestations from Simotupusa province poetry (SIP)

'assign.INF-'

1) PJn *opuase > *opose > SIP opuse-

2) PJn *opuəse > *opose > SIP opuse-

3) PJn *opuəse > SIP opuse-

4) PJn *opose > SIP opuse-

The WOJ reflex of this form is *opose*. Unfortunately I could not find this word in any of the Ryukyuan sources I use.

Kupchik proposes that *opose > opuse while mentioning the contraction of *ua is another explanation. Without any attestations in other provinces of this word however, I cannot rule out 1), 2), 3), or 4). Therefore, I count this as a 0~1 case vowel raising in SIP.

'rock'

1) PJn *esua > *eso > *oso > SIP osu

2) PJn *esuə > *eso > *oso > SIP osu

3) PJn *esua > *esu > SIP osu

4) PJn *esuə > *esu > SIP osu

5) PJn *eso > *esu > SIP osu

6) PJn *eso > *oso > SIP osu

The WOJ reflex of this form is *iso*. TO and SA attest *iso* as well, SU attests *osi*, and SIP attests *osu*. Vovin (2010: 34) reconstructs the PR form *esi 'stone, rock'. Based on IS, HA, YO, WA, CH, and TOK data, I reconstruct Pre-RY *isi, *iso, (cf. attested compounds with 'rock' in IS *kɨnsɨ*, *ufuiʃi*, HA *kinso:*, *sɨpani* YO *muitʃi*, *hanataitʃi*, and WA *ʃi:*, CH *ʔiʃibusu*, TOK *ʔisɨburu* 'rock', data from Hirayama 1988: 122, 1986: 90-91). As neither the PR form constructed by Vovin, nor my Pre-RY reconstruction match the SIP form, I consider the SIP form not a result of borrowing from Pre-RY.

Kupchik claims that PJn *eso (with the PJn form being from Vovin (2010: 127)) raises in the final syllable in Simotupusa, which yields the SIP form *osu* (following the sporadic fronting of *e > o). It is possible that 'rock' had an earlier vowel sequence *ua/***uə** however, in its second syllable. Due to a lack of attestations in EOJ dialects of 'rock', I consider any of the above etymologies possible. I consider this a 0~1 case of vowel raising in SIP.

Additionally, no single hypothesis appears to be more convincing than the other, as we lack data from MU, KAK, and SIK provinces to convincingly dismiss 1), 2), 3), 4), 5), and 6). Therefore, I count this word as a 0~1 case of vowel raising.

'field'

1) PJn *nə > *no > SIP nu

2) PJn *no > SIP nu

Unfortunately Thorpe (1983: 285) reconstructs PR *patake ‘field’ and not a form cognate with SIP *nu*. Additionally ‘field’ is not documented in Hirayama (1986 or 1988). However I was able to find Hirara *nu:* and Gusukube *nu:* from Nakamatsu (1987: 115), and also Okinawan *u:-nu:* ‘large field, large ground’ (Sakihara 2006: 202 who cites data from Higa (1995)). Therefore, we can reconstruct Pre-RY *nu: ‘field’ because both Northern and Southern Ryukyuan data are available. As the Pre-RY form matches the SIP form, we can count this word as a potential case of SIP borrowing a Pre-RY form.

The WOJ reflex of this form is *no*. SIN and MU also attest *no*, while SIN attests *nə* and SIP attests *nu*. Kupchik follows the *no > nu hypothesis and counts SIN *nə* as a misspelling. However, I consider SIN *nə* a retention. Although I follow 1), even if I followed 2), because both involve vowel raising, I count this a case of vowel raising in SIP.

Attestations from Simotukeno province poetry (SIK)

‘be.sick-ITER-NML’ or ‘sickness’

1) PJn *jam-ap-i > *jom-ap-i > SIK jum-ap-i

2) PJn *jam-ap-i > SIK jum-ap-i

3) PJn *jamapi > *jomapi > SIK jumapi

4) PJn *jamapi > SIK jumapi

The WOJ reflex of this form is *jam-ap-i*. Thorpe does not reconstruct this word/phrase for PR, but Modern Ryukyuan data does support a reconstruction. I reconstruct Pre-RY *jam- ‘suffer-, feel.pain-‘. This reconstruction is based on IS, HA, WA, CH, and TOK *jam*- ‘suffer-, feel.pain-‘, and YO *dam*- ‘id.’ (data from Hirayama 1988: 107-108, 1986: 70), cf. IS and HA *jam-uɴ*, YO *dam-uɴ*, WA *jam-iɴ*, CH *jam-juɴ*, TOK *jam-juɴ* ‘feel.pain-NPST’. As the Pre-RY form does not match the SIK form, and the iterative -ap- is also unattested in Ryukyuan (Vovin 2009: 828), I do not count this word as a possible loan from Pre-RY into SIK.

Kupchik notes that the conditioning environment appears to be *am. He also mentions a few other examples that also show this correspondence, UD *najum*- : WOJ *najam*- ‘worry-’, and UD *nu^{ŋ}gan*- : WOJ *na^{ŋ}gar*- ‘flow-’ which he asserts may have originally had an *-mk- sequence that became prenasalized [^{ŋ}g]. He does not go beyond stating this however. I think it may be that the labiality of [m] is spreading to the preceding vowel, although the mid vowel [o] would be a closer round vowel than the high vowel [u] would. Therefore I think in these cases, *a > (*o) > u (before, after, or during the change of PJn *r > UD n, WOJ r or PJn *n > WOJ r, EOJ n), as vowel raising is attested in EOJ poems. I cannot rule any of the above etymologies out, I consider this a 0~1 case of vowel raising in SIK, because I do not consider labialization to [u] from [a] vowel raising, alongside *e, *o > i, u.

Attestations from Sinano province poetry (SIN)

‘cloud’

1) PJn *kumuə > *kumo > SIN kumu

2) PJn *kumuə > SIN kumu

3) PJn *kumo > SIN kumu

Thorpe (1983: 272-273) reconstructs PR *kumo ‘cloud’. As we see numerous cases of vowel raising in Thorpe’s Ryukyuan data, e.g. Tetechina *kumu’*, Serikaku and Yonamine *kumu:*, Ieshima *k’umu:*, Ōgami, Ōura, Yonaha, Uechi, Nakasuji, Ishigaki, Kābira, Taketomi, Hatoma, Kuroshima and Sonai *humu*, it seems possible that PR *kumo > Pre-RY *kumu, *kumo in 8th century Ryukyuan dialects. Reflexes with second syllable [o] attested Pre-RY *kumo alongside *kumu, cf. Shidōke, Aden, Yuwan, Koniya, Inō, Kametsu, Chabana, Oku, Hentona, Naha, Shuri, and Ōbama *komo*. Because vowel raising clearly did happen in Ryukyuan, the question remains, when did it happen. If it happened by the 8th century in some Ryukyuan dialects, then the Ryukyuan form may have been borrowed into SIN, which would explain the high vowel in the second syllable of SIN *kumu*. Therefore I consider SIN *kumu* a possible borrowing from Pre-RY.

The WOJ reflex of this form is *kumo*. We also see *kumo* in KAK, MU, PI, and KAP, and *kumə* in KAK. Because *kuma* is unattested, I believe it is safe to assume the proto-form did not include *ua,

however, *uə is a possibility as PJn *kumuə > *kumə would have become *kumo* due to the merging of *ə > o before labial onsets. Furthermore, *kumə* may have been archaic and preserved in KAK where *kumə* and *kumo* are attested, although as WOJ did not distinguish mə and mo syllables in the Man'yōshū, this would require knowledge of earlier orthographic customs that may or may not have been taught to EOJ speakers, e.g. knowledge of the distinction of etymological *mə from mo found in the Kojiki (711~712 CE). Kupchik analyzes this form as vowel raising of *o > u. However, as I cannot rule out the above hypotheses, I consider this a 0~1 case of vowel raising in SIN.

‘EPT’

1) PJn *kamə > *kamo > SIN kamu

2) PJn *kamo > SIN kamu

The WOJ reflex of this form is *kamo* / *kamu* (rarer) although it is spelled as *kamə* in the songs of the Kojiki, where mo and mə are still distinguished orthographically (Vovin 2009: 1234). Because of this, I think it is possible to rule out vowel sequence proto-form hypotheses, as WOJ would have fused *uə > o rather than delete its first vowel leaving kamə > kamo from *kamuə. As for Ryukyuan data, the emphatic particle kamo ~ kamu ~ kam ~ kaŋ is attested only in the Setouchi dialect of Amami (Nohara 1998: 117) as cited by Vovin (2009: 1247). If the 8th century form for this was Pre-RY *kamu, like one of its modern attestations in Seouchi, it could have been the source of SIN *kamu*. However, without further comparative evidence from Ryukyuan, I cannot reconstruct this emphatic particle any further than Pre-Setouchi. Therefore I reject this word a possible loanword from Pre-RY.

As 1) seems like the only possible hypothesis, and it involves vowel raising, I count this word as a case of vowel raising.

‘garment’

1) PJn *kərəmua > *kərəmo > SIN kərəmu

2) PJn *kərəmuə > *kərəmo > SIN kərəmu

3) PJn *kərəmua > SIN kərəmu

4) PJn *kərəmuə > SIN kərəmu

5) PJn *kərəmuə > *kərəmə > *kərəmo > SIN kərəmu

6) PJn *kərəmə > *kərəmo > SIN kərəmu

7) PJn *kərəmo > SIN kərəmu

The WOJ reflex of this form is spelled as *kərəmə*, although it was likely pronounced as *kərəmo* in WOJ. *kərəmə* is remarkably consistently transcribed as *kərəmə* and not *kərəmo* in MU, SIP, and KAP, although it is found once with final syllable [o] in PI, cf. -^{ŋ}*-gərəmo* '-GEN-garment'. Unfortunately for the PR reconstruction, 'clothing' which is reconstructed in Thorpe (1983: 272) is *kinu, which is also found in WOJ and EOJ as *kinu* 'robe, garment', and not the reflex of *kərəmə*/*kərəmo* which is needed here. Additionally, I could not find any such reflex in any other Ryukyuan data sources either.

Kupchik analyzes this form as vowel raising of *o > u. Without checking all of the Kojiki for *kərəmə*, I cannot eliminate vowel sequence hypotheses with confidence, but because EOJ strangely spells this as *kərəmə* in three out of five cases, with the remaining two possibly developing from *kərəmə (SIN *kərəmu*, PI -^{ŋ}*-gərəmo*). I am inclined to believe that the [ə] before [m] in kərəmə may have been preserved in these EOJ dialects, but not necessarily from PJn *kərəmə. As I cannot rule out any of the above etymologies, I consider this word a 0~1 case of vowel raising.

Attestations from Suruga province poetry (SU)

'long for-'

1) PJn *kopoj-si- > *kopuj-si- > *kopusi- > SU kupusi-

2) PJn *kopoj-si- > *kopuj-si- > *kupuj-si- > SU kupusi-

3) PJn *kopoj-si- > *kupuj-si- > SU kupusi-

4) PJn *kopoj-si- > *kupoj-si- > *kuposi- > SU kupusi-

5) PJn *kopoj-si- > *kupoj-si- > *kupuj-si- > SU kupusi-

6) PJn *kopoj-si- > *koposi- > *kopusi- > SU kupusi-

7) PJn *kopoj-si- > *koposi- > *kuposi- > SU kupusi-

8) PJn *kopoj-si- > *koposi- > SU kupusi-

The WOJ reflex of this form is kopɨsi-. As I have already discussed this word above for KAP on page 54, I come to the same conclusion here regarding the Ryukyuan comparison.

Kupchik counts this as a case of *o > u from *kopoj-si- and mentions that it may also be a case of regressive vowel assimilation. The reason why there are so many more alternative hypotheses for the SU case than the KAP or MU cases is because the SU form attests both its first and second syllables of the form concerned with [u], compared to KAP *kopu-* and MU *kopusi-* which only attest one syllable raising. This allows for many more possible developmental paths, despite all originating from *kopoj-si-. 6), 7), and 8) involve contraction first. 4) and 5) involve the raising of the first syllable first, and 1), 2), and 3) involve the raising of the second vowel first. I consider all etymologies here possible, however, as all of the eight hypotheses however involve two cases of vowel raising, I count this form as attesting two cases of vowel raising in SU.

Attestations from Töpotuapumi province poetry (TO)

'beloved one'

1) PJn *imuə > imo > TO imu

2) PJn *imuə > TO imu

3) PJn *imə > *imo > TO imu

4) PJn *imo > imu

The WOJ reflex of this form is *imo*. As I have already discussed the Ryukyuan comparison for this word above, I will not repeat it here.

As I have discussed this same development already for PI, and I agree that the same hypotheses are possible here, I will not repeat my discussion from PI. I conclude the same analysis as above and count this as a 0~1 case of vowel raising.

'white'

1) PJn *sirau > *siro > TO siru

2) PJn *sirau > TO siru

Thorpe (1983: 347) reconstructs PR *siro-. As the vowel is not a match to the TO form, I do not consider this a possible Pre-RY borrowing into TO.

The WOJ reflex of this form is *siro*, although as a bound stem it is attested as *sira-* in WOJ. Because of this, the etymology is quite clear. Considering also that TO attests fusion more than any either type of contraction, I count this as a case of vowel raising of a borrowed COJ/WOJ form.

'go back and forth-TENT-ATTR'

1) PJn *kaju-ap-am-u > TO kajop-am-u

2) PJn *kaju-ap-am-u > TO kajup-am-u

3) PJn *kajop-am-u > TO kajup-am-u

The WOJ reflex of this form is *kajop-am-u*. Unfortunately, I could not find this word in Ryukyuan, and it is only attested one other time from an UD where it is spelled identical to WOJ.

Kupchik follows the vowel raising hypothesis (3) here. *kaju-əp-am-u can be ruled out here because the iterative auxiliary *-ap-* is not from *-əp-. TO attests fusion in a few cases, and also attests V_2 deletion once in TO *ka^{ŋ}gə* 'shadow'. Therefore, as no single hypothesis above (1, 2, 3) seems more convincing than the other, I count this as a 0~1 case of vowel raising in TO.

6.3 Conclusion to the vowel raising section

In conclusion, out of 31 possible cases of borrowing from Pre-RY, only 4 cases seem possible, PI *ju* < PR *ju: 'night', SIP *nu* < Pre-RY *nu: 'field', SIN *kumu* < Pre-RY *kumu 'cloud', and UD si- < Pre-RY *si- 'do-'. A significant factor that hindered a higher number of possible forms was the fact that many words have no reflexes in Ryukyuan, e.g. *pe*, *ipi*, *me*, *-ki*, *imu*, *sakimori*, *sinup-*, *tajora*, *kuje*, *opuse*, and so on. There are a few possible reasons why more reflexes could not be found for these words in Ryukyuan. One possible reason might be that there were reflexes in Ryukyuan for these words, but in the 1200 years since the mid 8th century, they fell out of use and simply died. Another possible reason is that many of these words were recent developments in Proto-Japanese. This would explain why some functional and content words only appear in WOJ and EOJ but never in Ryukyuan. Regardless of whatever other possible reasons there may be however, the vowel raising evidence in support of the Ryukyuan and Eastern Old Japanese contact hypothesis is not as convincing as was intentionally hoped for, although 4 cases is still better than none.

CHAPTER 7

CONCLUSION

This thesis has tested all cases of EOJ denasalization, fortition, and vowel raising against available Ryukyuan data. The results are however, quite less convincing than expected. From denasalization, the hypothesis draws its greatest support with as many as 12 EOJ attestations of denasalization that could be attributed to reconstructed Pre-RY forms. This number is somewhat deceptive however, as 10 of these attestations are the possessive case marker *-ga*. Evidence from fortition is only supported by one of two attested cases of apparent EOJ fortition, PR *bakare. Modern dialect data supports this reconstruction as a potential borrowed form. Due to the lack of knowledge regarding the timing of denasalization and backing of PJ *ə > PR *o, I cannot reconstruct PR *də which would match EOJ *də* 'EPT'. Regarding vowel raising, there are only 4 EOJ spelling variations that could be attributed to borrowing of a reconstructed Pre-RY form. Furthermore, the reality of the matter is that all the cases of potentially borrowed forms hinge on assumptions about whether or not a particular form had a raised vowel or not, whether the emphatic particle had retained [ə] in *də or not following denasalization, and whether or not a particular consonant was prenasalized or not during the 8th century in Pre-Ryukyuan dialects. At present the Ryukyuan and Eastern Old Japanese contact hypothesis proposed here is still very speculative. The assumptions made here may someday be proven true or falsified by future research, likely drawing support from both extralinguistic and linguistic data sources.

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